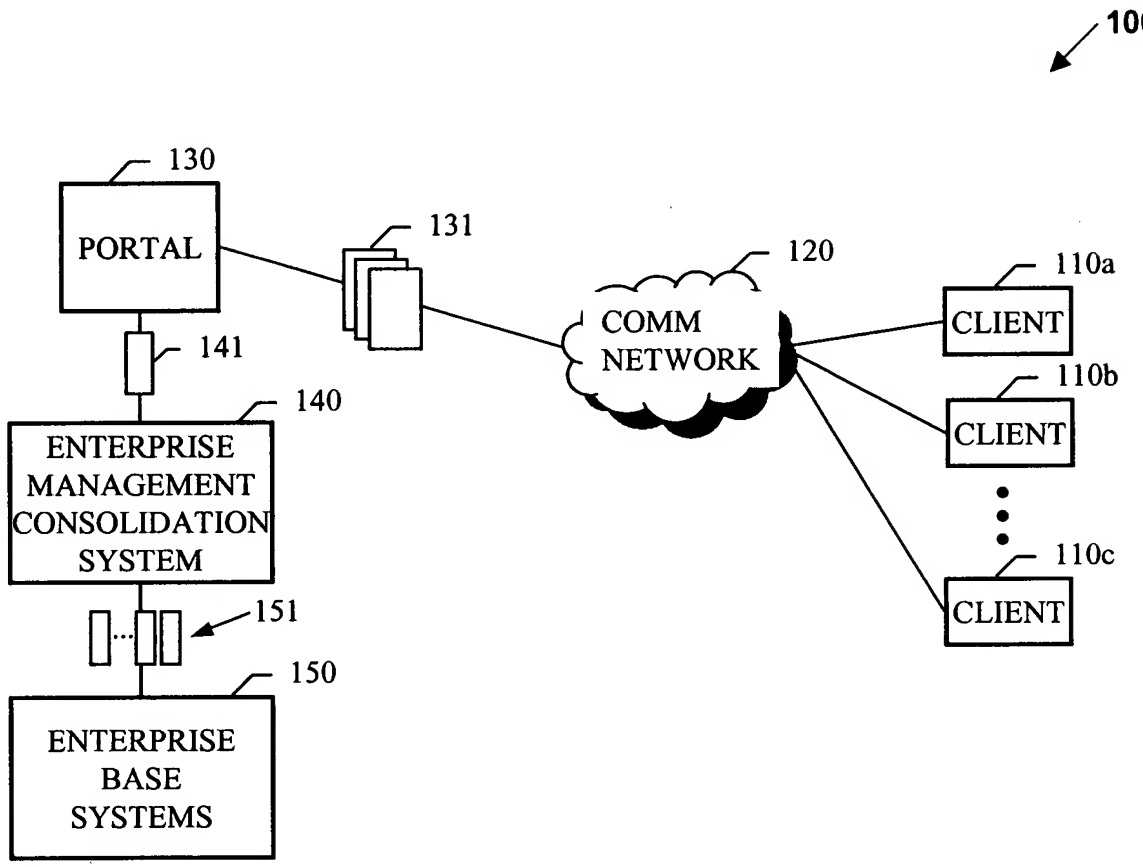
100
130
PORTAL
131
120
110a
CLIENT
COMM
NETWORK
141
110b
CLIENT
140
ENTERPRISE
MANAGEMENT
CONSOLIDATION
SYSTEM
110c
CLIENT
151
150
ENTERPRISE
BASE
SYSTEMS

FIG. 1A

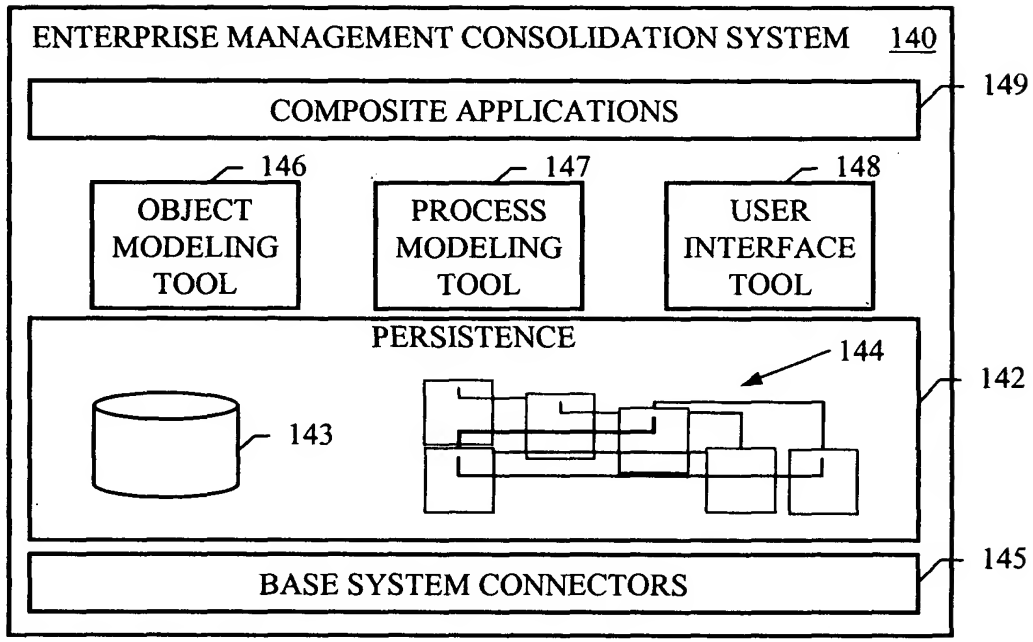
ENTERPRISE MANAGEMENT CONSOLIDATION SYSTEM 140
COMPOSITE APPLICATIONS
149
146
147
148
OBJECT MODELING TOOL
PROCESS MODELING TOOL
USER INTERFACE TOOL
PERSISTENCE
144
142
143
BASE SYSTEM CONNECTORS
145

FIG. 1B

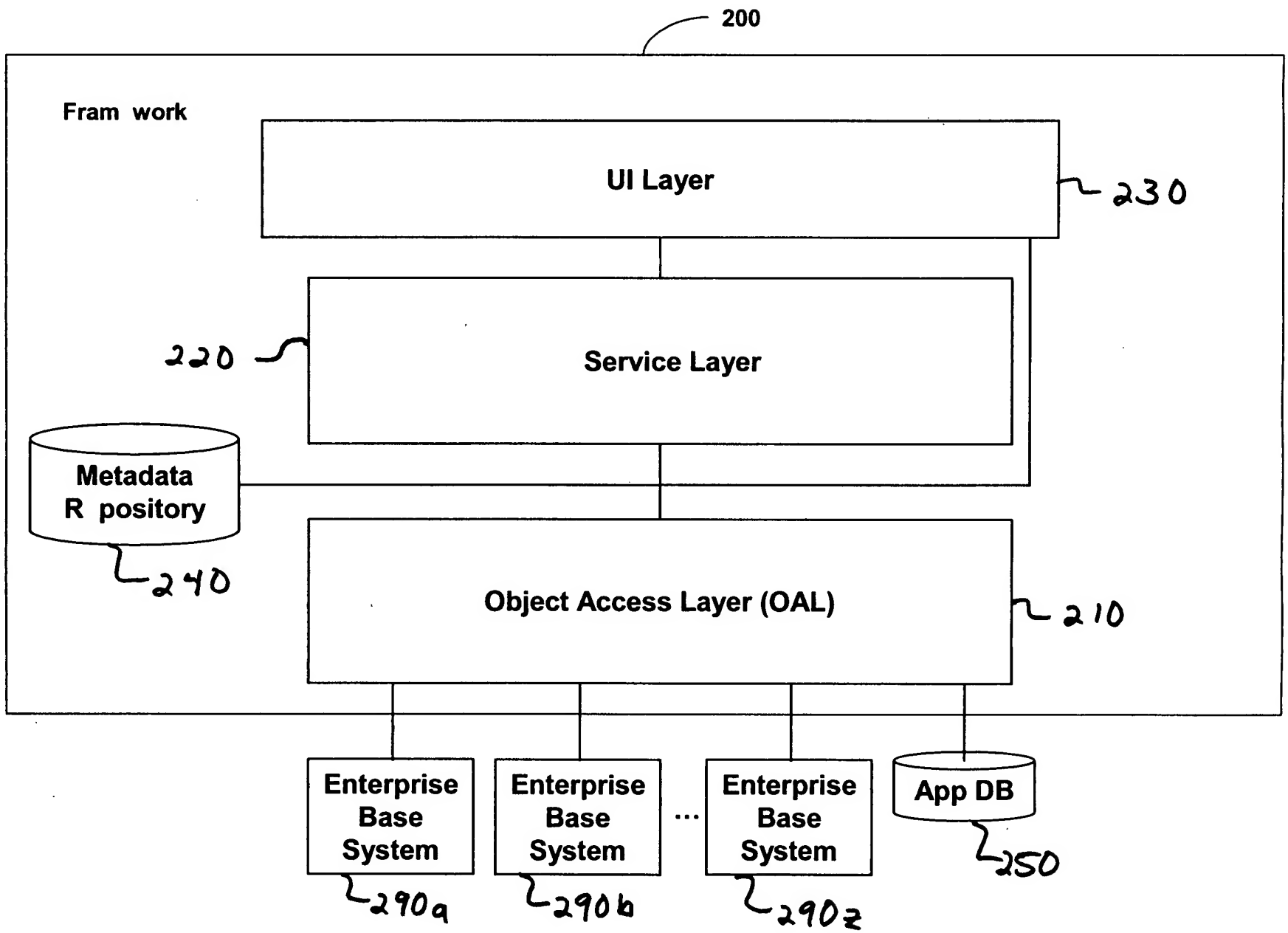
200
Fram work
UI Layer
230
220
Service Layer
Metadata
R pository
240
Object Access Layer (OAL)
210
Enterprise
Base
System
290a
Enterprise
Base
System
290b
...
Enterprise
Base
System
290z
App DB
250

FIG. 2

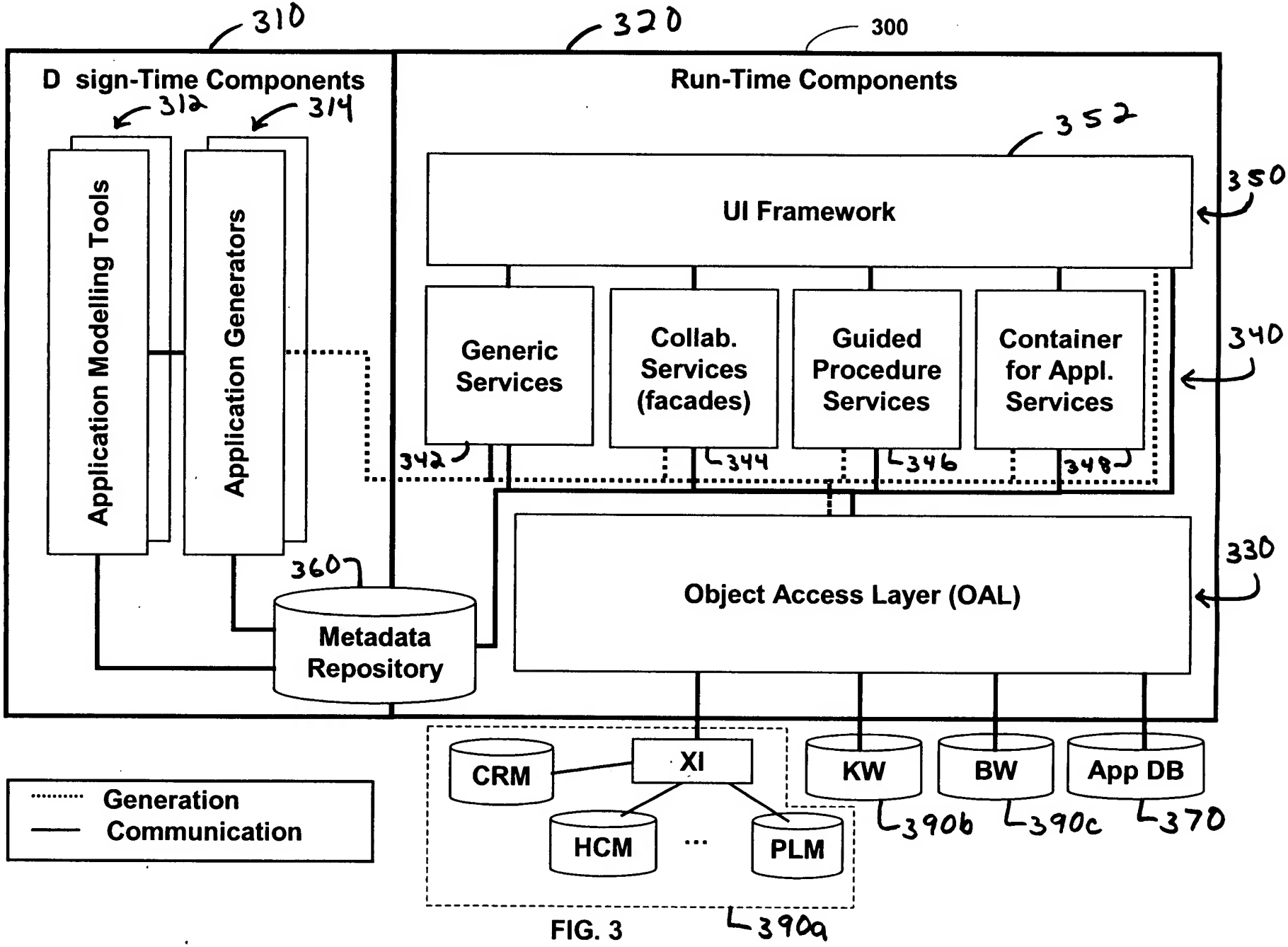
310
320
300
D sign-Time Components
312
314
Application Modelling Tools
Application Generators
Run-Time Components
352
UI Framework
350
Generic Services
Collab. Services (facades)
Guided Procedure Services
Container for Appl. Services
340
342
344
346
348
360
Metadata Repository
Object Access Layer (OAL)
330
CRM
XI
HCM
...
PLM
KW
BW
App DB
390b
390c
370
390a
Generation
Communication

FIG. 3

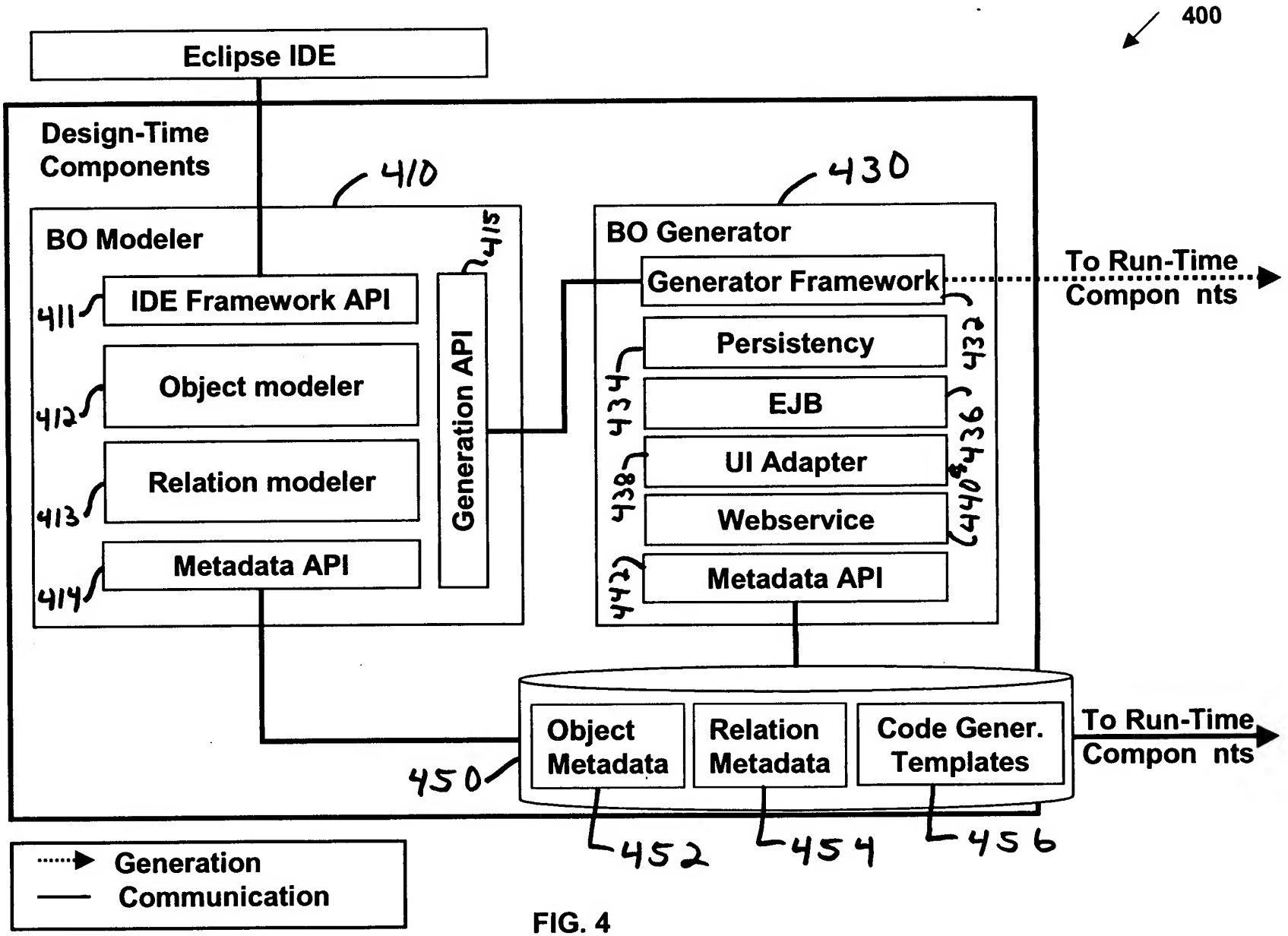
400
Eclipse IDE
Design-Time Components
410
BO Modeler
415
411
IDE Framework API
412
Object modeler
413
Relation modeler
414
Metadata API
Generation API
430
BO Generator
Generator Framework
To Run-Time Compon nts
Persistency
EJB
UI Adapter
Webservice
Metadata API
432
434
436
438
440
442
450
Object Metadata
Relation Metadata
Code Gener. Templates
To Run-Time Compon nts
452
454
456
Generation
Communication

FIG. 4

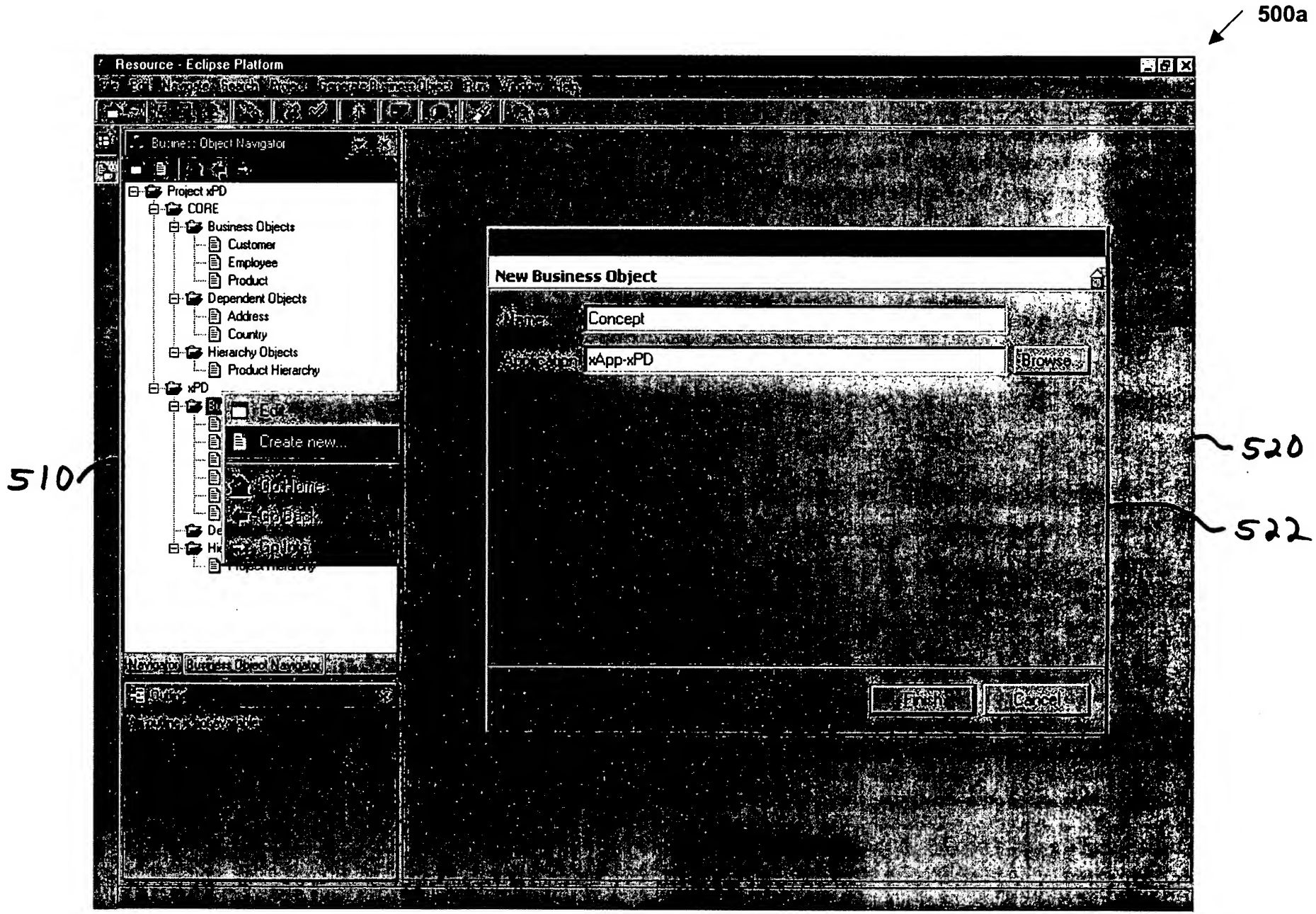
500a
Resource - Eclipse Platform
Project xPD
CORE
Business Objects
Customer
Employee
Product
Dependent Objects
Address
Country
Hierarchy Objects
Product Hierarchy
xPD
Create new...
Go Home
Go Back
New Business Object
Concept
xApp-xPD
Browse...
Cancel
510
520
522

FIG. 5A

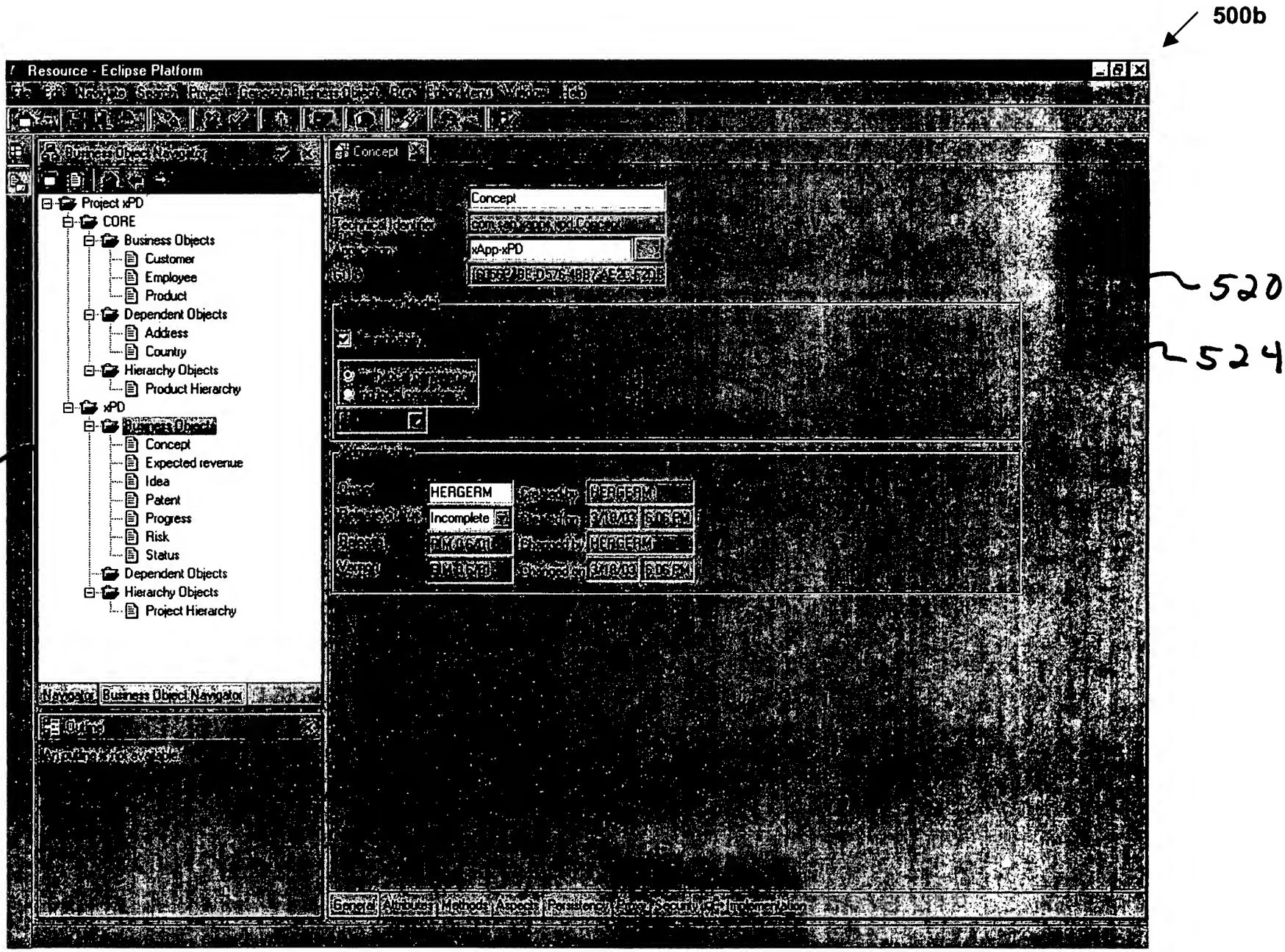
500b
Resource - Eclipse Platform
Project xPD
CORE
Business Objects
Customer
Employee
Product
Dependent Objects
Address
Country
Hierarchy Objects
Product Hierarchy
xPD
Business Objects
Concept
Expected revenue
Idea
Patent
Progress
Risk
Status
Dependent Objects
Hierarchy Objects
Project Hierarchy
Concept
xApp-xPD
HERGERM
Incomplete
510
520
524

FIG. 5B

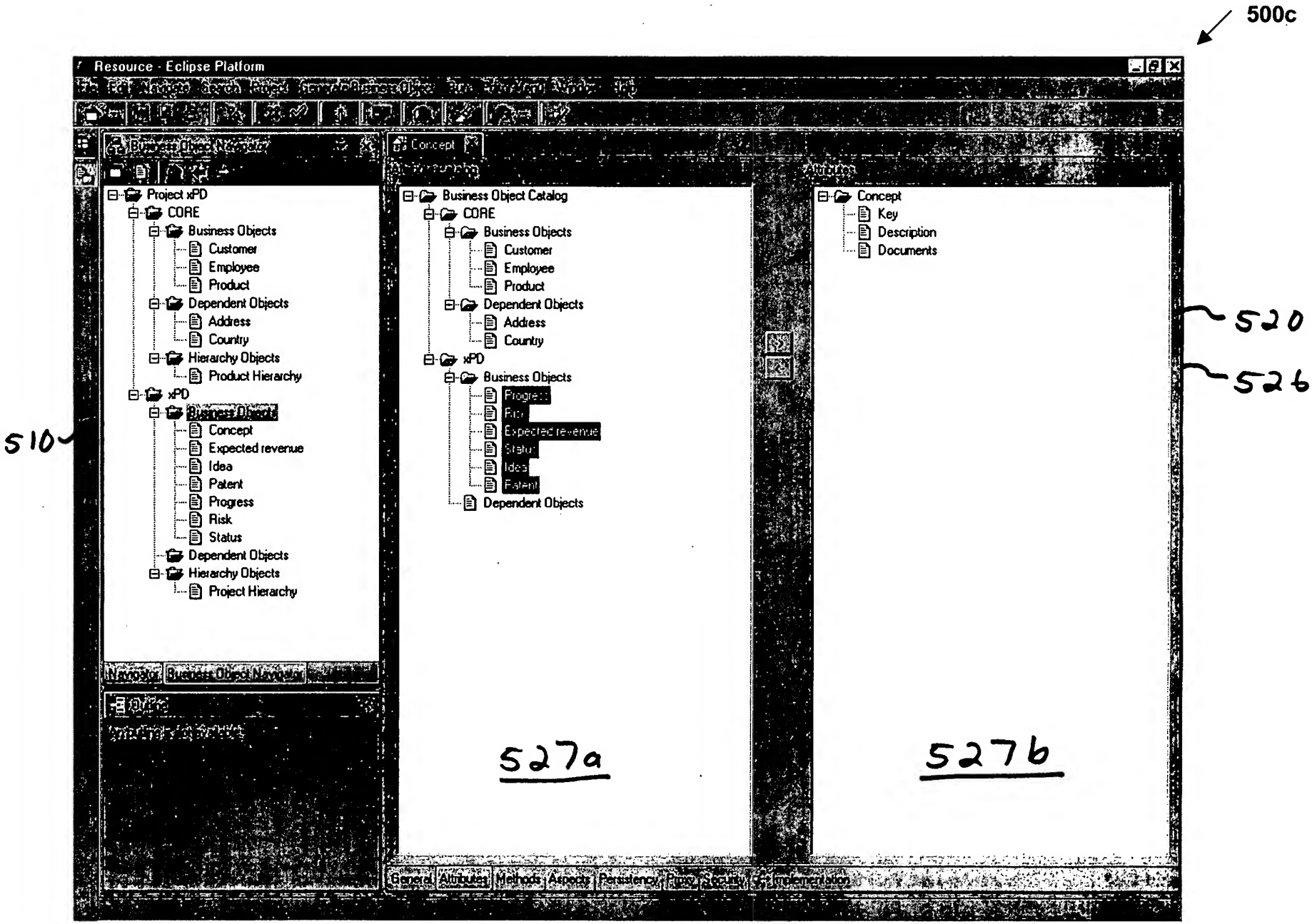
500c
Resource - Eclipse Platform
Project xPD
CORE
Business Objects
Customer
Employee
Product
Dependent Objects
Address
Country
Hierarchy Objects
Product Hierarchy
xPD
Business Objects
Concept
Expected revenue
Idea
Patent
Progress
Risk
Status
Dependent Objects
Hierarchy Objects
Project Hierarchy
510
Business Object Catalog
CORE
Business Objects
Customer
Employee
Product
Dependent Objects
Address
Country
xPD
Business Objects
Dependent Objects
527a
Concept
Key
Description
Documents
520
526
527b
General
Attributes
Methods
Aspects
Persistency
Security
Implementation

FIG. 5C

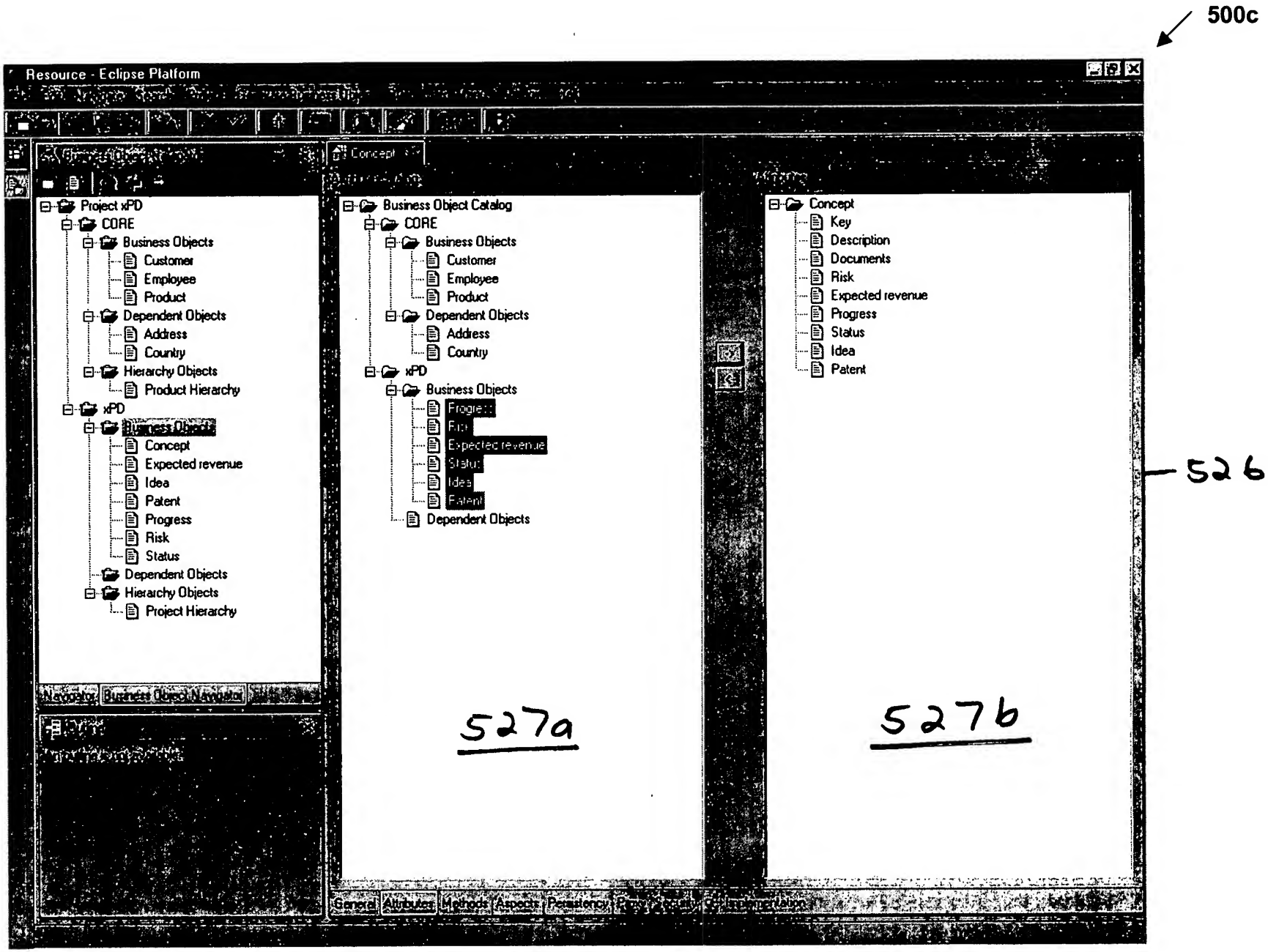
500c
Resource - Eclipse Platform
Project xPD
CORE
Business Objects
Customer
Employee
Product
Dependent Objects
Address
Country
Hierarchy Objects
Product Hierarchy
xPD
Business Objects
Concept
Expected revenue
Idea
Patent
Progress
Risk
Status
Dependent Objects
Hierarchy Objects
Project Hierarchy
Business Object Catalog
CORE
Business Objects
Customer
Employee
Product
Dependent Objects
Address
Country
xPD
Business Objects
Dependent Objects
Concept
Key
Description
Documents
Risk
Expected revenue
Progress
Status
Idea
Patent
526
527a
527b

FIG. 5D

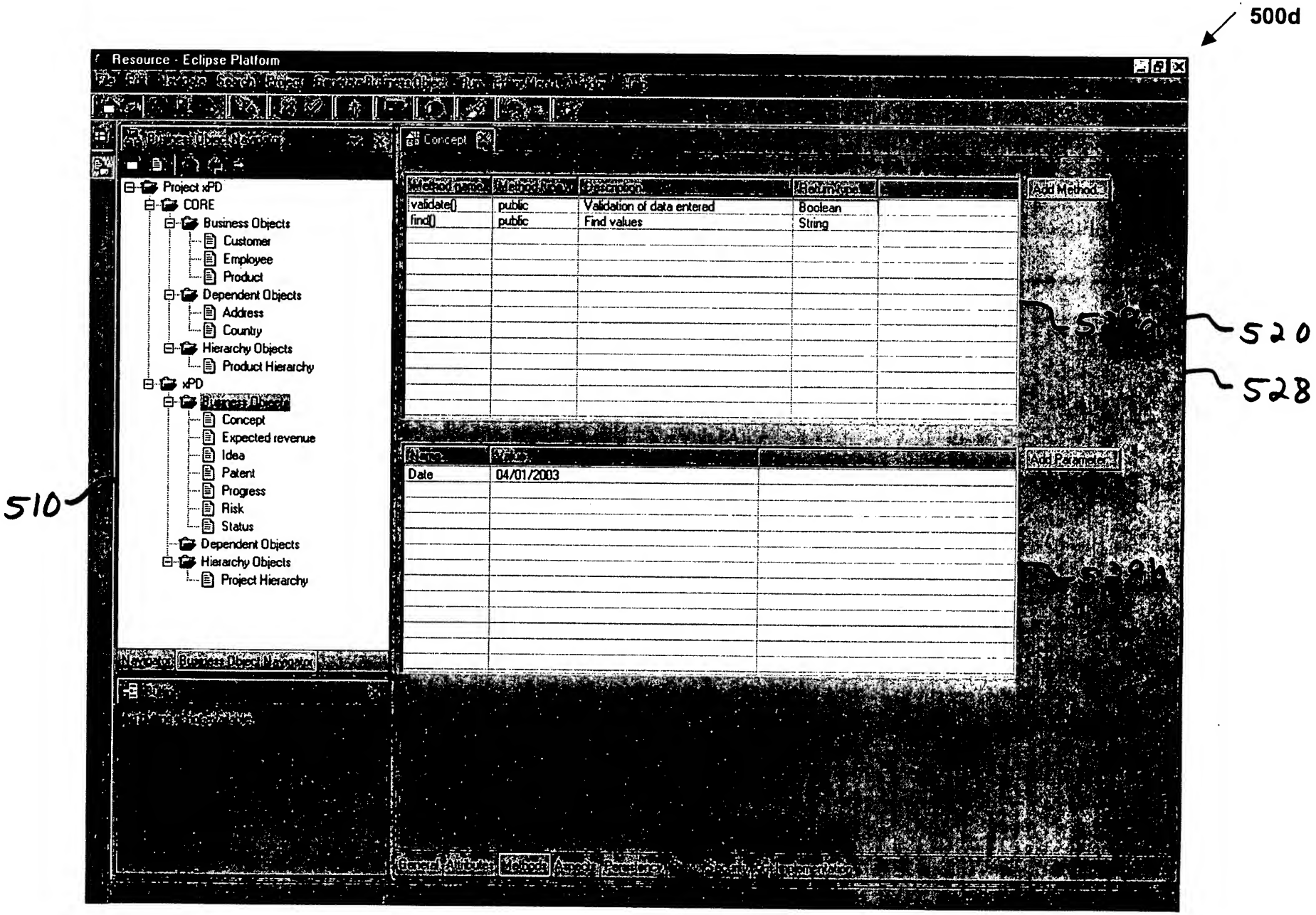
500d
Resource - Eclipse Platform
Concept
Project xPD
CORE
Business Objects
Customer
Employee
Product
Dependent Objects
Address
Country
Hierarchy Objects
Product Hierarchy
xPD
Concept
Expected revenue
Idea
Patent
Progress
Risk
Status
Dependent Objects
Hierarchy Objects
Project Hierarchy
validate()
public
Validation of data entered
Boolean
find()
public
Find values
String
Add Method...
Add Parameter...
Date
04/01/2003
510
520
528

FIG. 5E

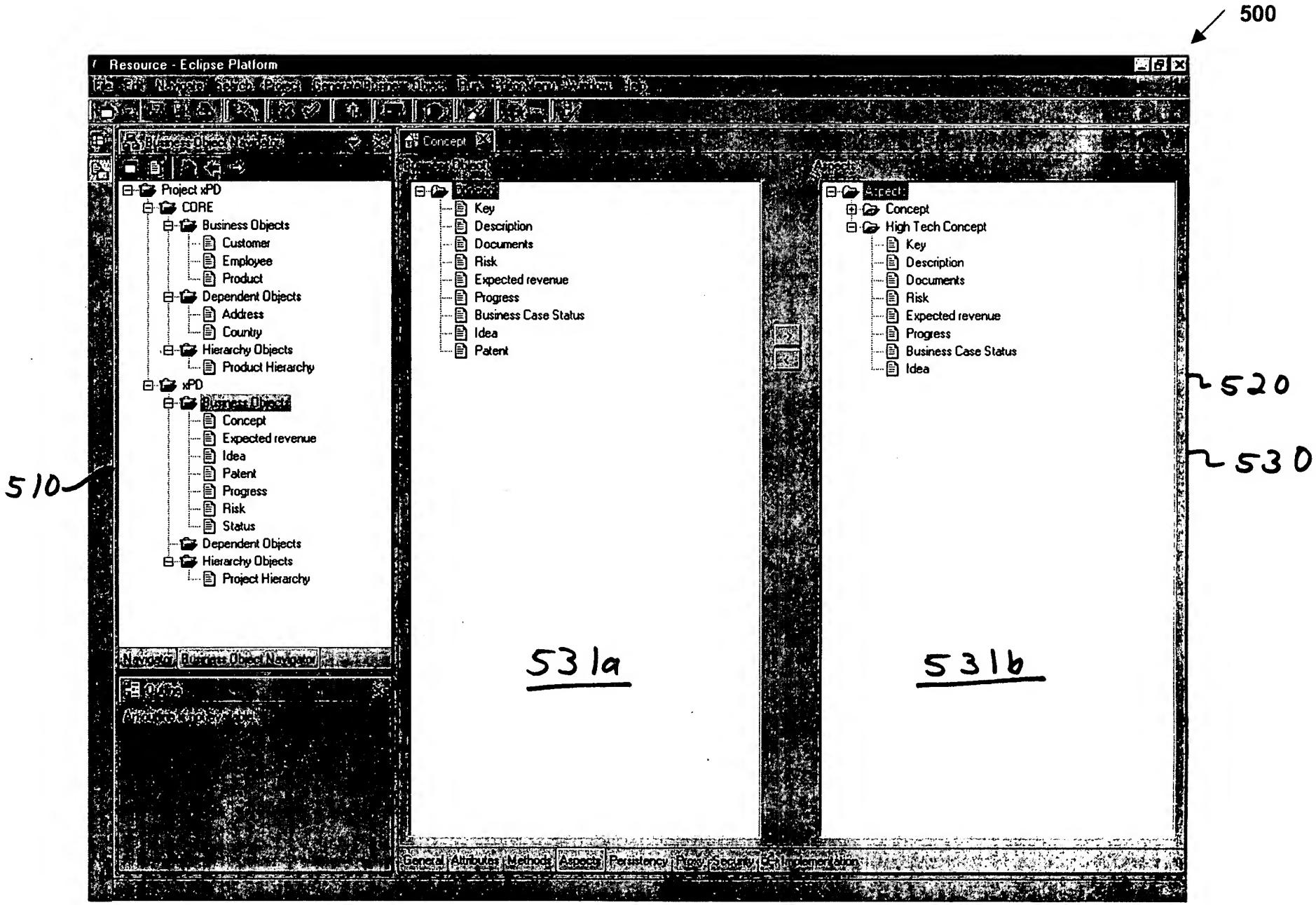
500
Resource - Eclipse Platform
Project xPD
CORE
Business Objects
Customer
Employee
Product
Dependent Objects
Address
Country
Hierarchy Objects
Product Hierarchy
xPD
Business Objects
Concept
Expected revenue
Idea
Patent
Progress
Risk
Status
Dependent Objects
Hierarchy Objects
Project Hierarchy
Concept
Key
Description
Documents
Risk
Expected revenue
Progress
Business Case Status
Idea
Patent
Aspects
Concept
High Tech Concept
Key
Description
Documents
Risk
Expected revenue
Progress
Business Case Status
Idea
510
520
530
531a
531b
General
Attributes
Methods
Aspects
Persistency
Flow
Security
Implementation

FIG. 5F

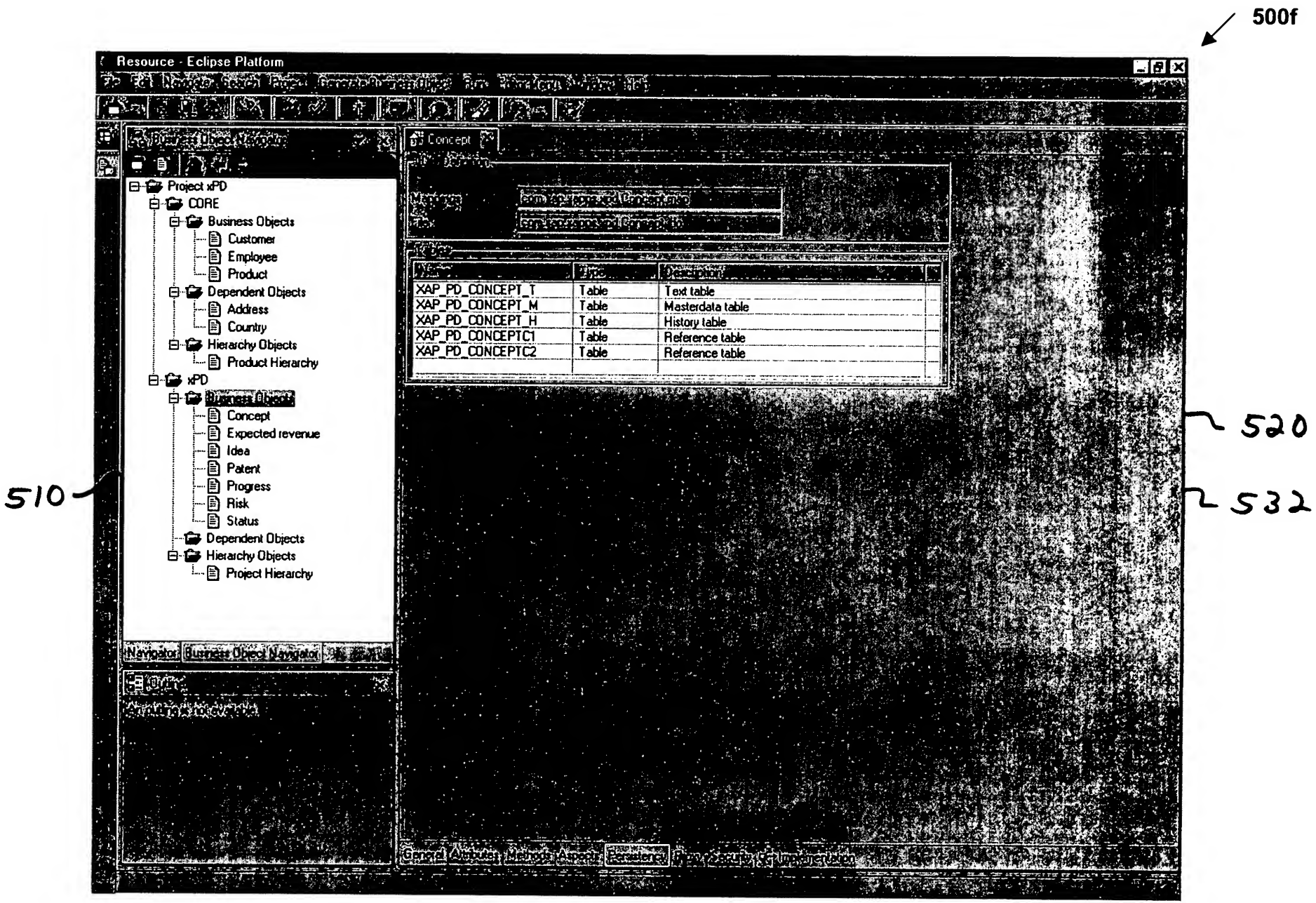
500f
Resource - Eclipse Platform
Project xPD
CORE
Business Objects
Customer
Employee
Product
Dependent Objects
Address
Country
Hierarchy Objects
Product Hierarchy
xPD
Business Objects
Concept
Expected revenue
Idea
Patent
Progress
Risk
Status
Dependent Objects
Hierarchy Objects
Project Hierarchy
Concept
XAP_PD_CONCEPT_T | Table | Text table
XAP_PD_CONCEPT_M | Table | Masterdata table
XAP_PD_CONCEPT_H | Table | History table
XAP_PD_CONCEPTC1 | Table | Reference table
XAP_PD_CONCEPTC2 | Table | Reference table
510
520
532

FIG. 5G

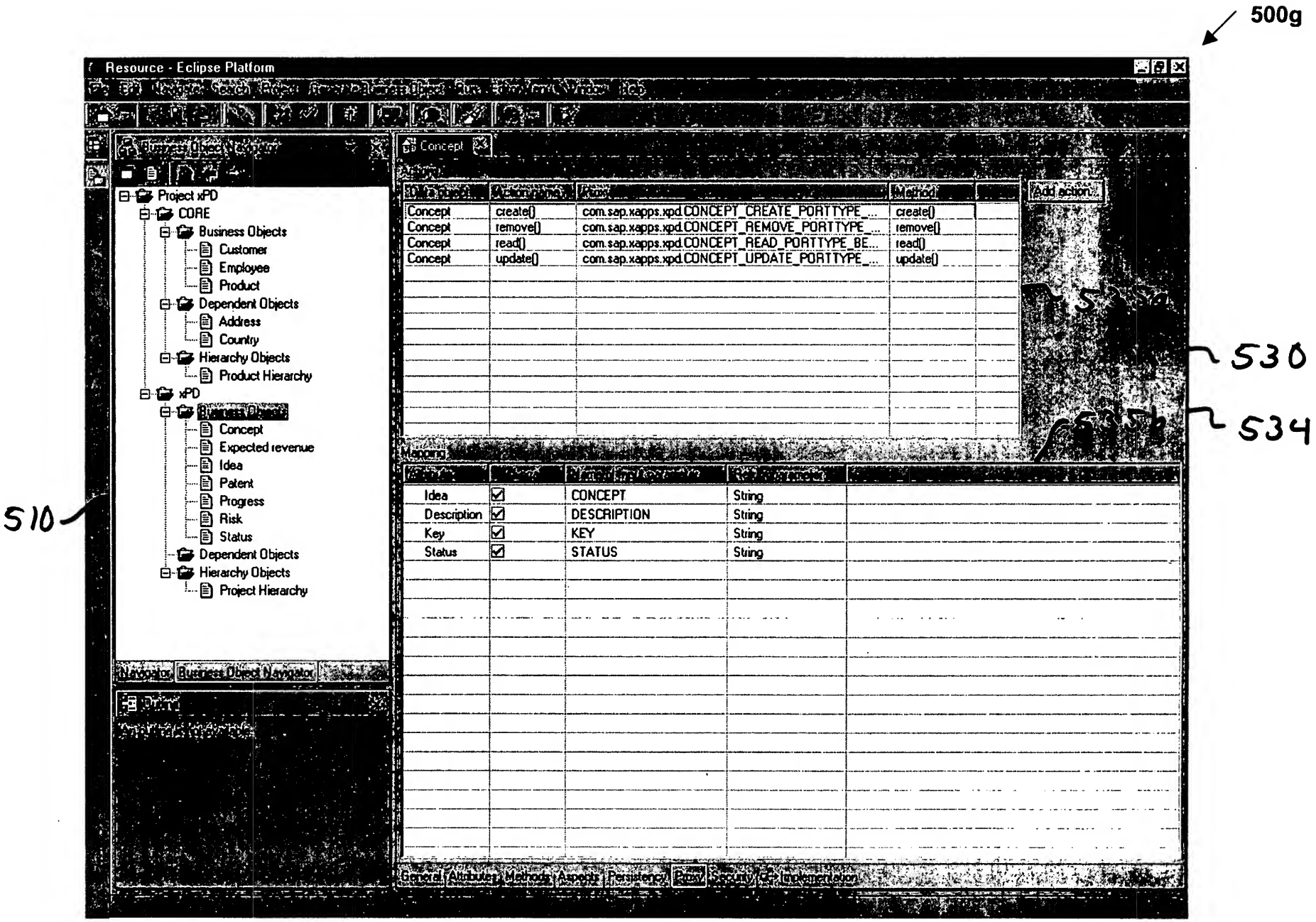
500g
Resource - Eclipse Platform
Project xPD
CORE
Business Objects
Customer
Employee
Product
Dependent Objects
Address
Country
Hierarchy Objects
Product Hierarchy
xPD
Business Objects
Concept
Expected revenue
Idea
Patent
Progress
Risk
Status
Dependent Objects
Hierarchy Objects
Project Hierarchy
Concept
Concept create() com.sap.xapps.xpd.CONCEPT_CREATE_PORTTYPE_... create()
Concept remove() com.sap.xapps.xpd.CONCEPT_REMOVE_PORTTYPE_... remove()
Concept read() com.sap.xapps.xpd.CONCEPT_READ_PORTTYPE_BE... read()
Concept update() com.sap.xapps.xpd.CONCEPT_UPDATE_PORTTYPE_... update()
Add action...
Idea CONCEPT String
Description DESCRIPTION String
Key KEY String
Status STATUS String
510
530
534

FIG. 5H

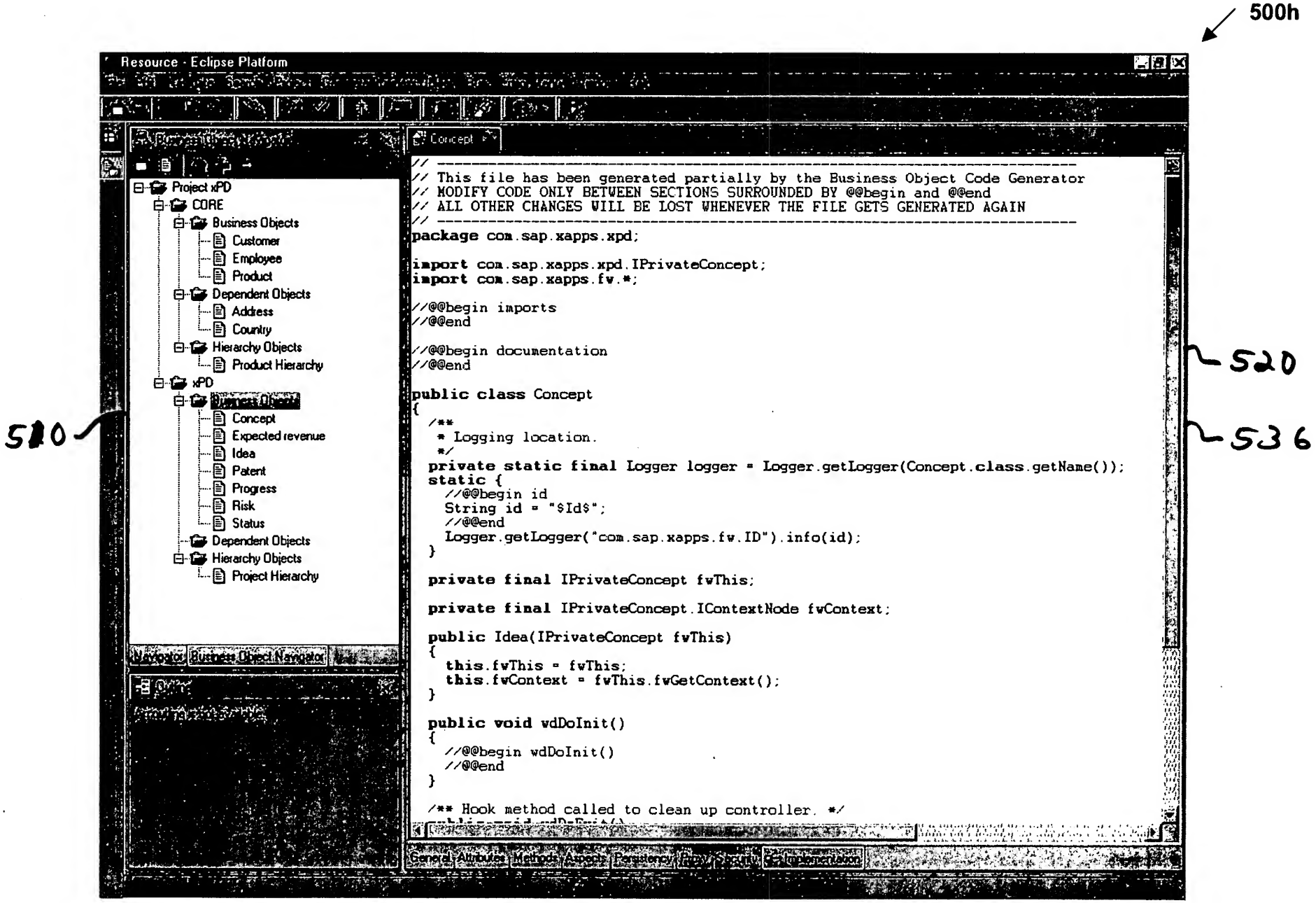
500h
Resource - Eclipse Platform
Project xPD
CORE
Business Objects
Customer
Employee
Product
Dependent Objects
Address
Country
Hierarchy Objects
Product Hierarchy
xPD
Business Objects
Concept
Expected revenue
Idea
Patent
Progress
Risk
Status
Dependent Objects
Hierarchy Objects
Project Hierarchy
510
520
536
Concept
// This file has been generated partially by the Business Object Code Generator
// MODIFY CODE ONLY BETWEEN SECTIONS SURROUNDED BY @@begin and @@end
// ALL OTHER CHANGES WILL BE LOST WHENEVER THE FILE GETS GENERATED AGAIN
package com.sap.xapps.xpd;
import com.sap.xapps.xpd.IPrivateConcept;
import com.sap.xapps.fw.*;
//@@begin imports
//@@end
//@@begin documentation
//@@end
public class Concept
{
/**
* Logging location.
*/
private static final Logger logger = Logger.getLogger(Concept.class.getName());
static {
//@@begin id
String id = "Id";
//@@end
Logger.getLogger("com.sap.xapps.fw.ID").info(id);
}
private final IPrivateConcept fwThis;
private final IPrivateConcept.IContextNode fwContext;
public Idea(IPrivateConcept fwThis)
{
this.fwThis = fwThis;
this.fwContext = fwThis.fwGetContext();
}
public void wdDoInit()
{
//@@begin wdDoInit()
//@@end
}
/** Hook method called to clean up controller. */

FIG. 5I

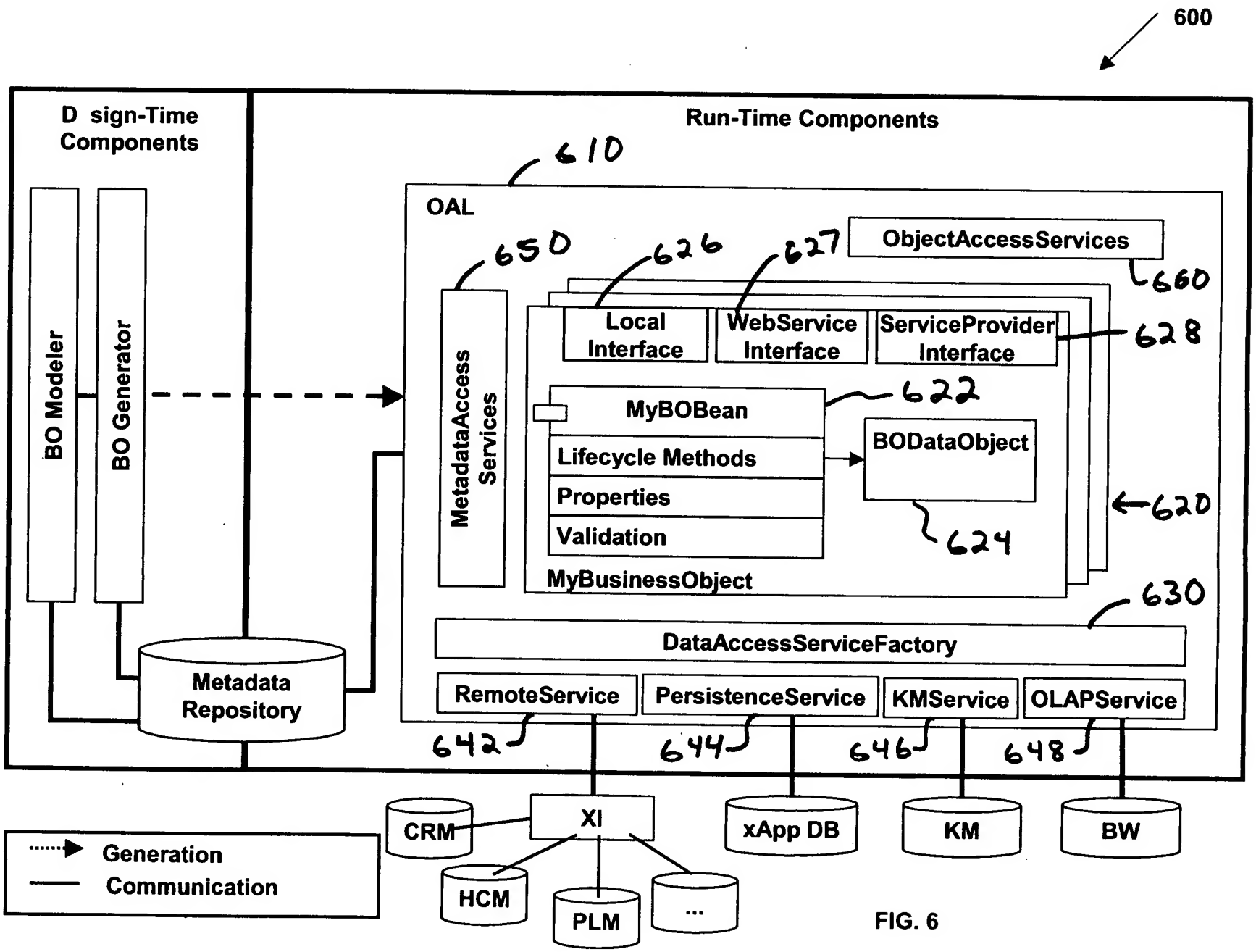
600
D sign-Time Components
Run-Time Components
610
OAL
650
626
627
ObjectAccessServices
660
Local Interface
WebService Interface
ServiceProvider Interface
628
MetadataAccess Services
622
MyBOBean
Lifecycle Methods
Properties
Validation
BODataObject
624
620
MyBusinessObject
630
DataAccessServiceFactory
RemoteService
PersistenceService
KMService
OLAPService
642
644
646
648
BO Modeler
BO Generator
Metadata Repository
CRM
XI
xApp DB
KM
BW
HCM
PLM
...
Generation
Communication

FIG. 6

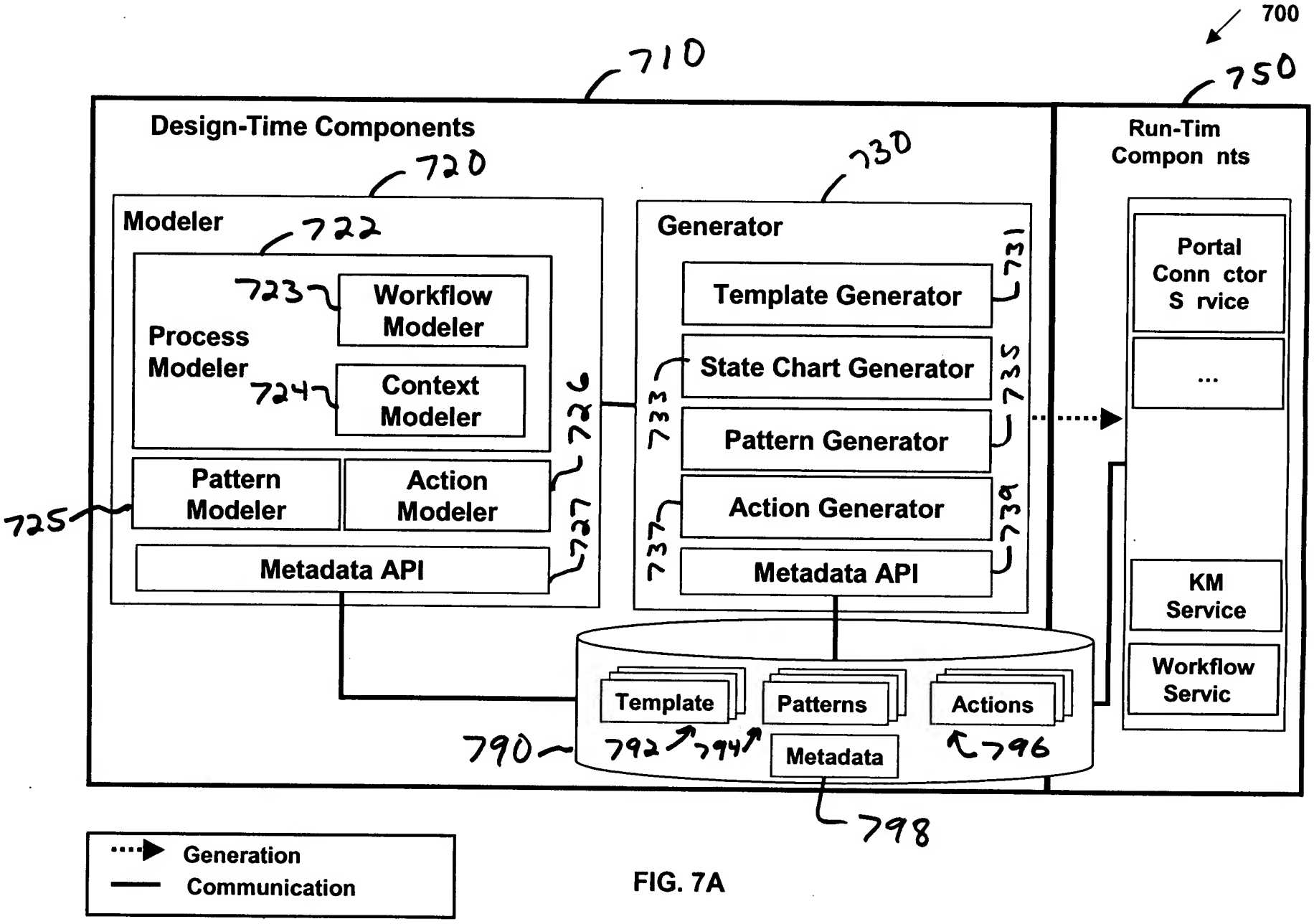
700
710
750
Design-Time Components
Run-Tim
Compon nts
720
730
Modeler
722
Generator
723
Workflow
Modeler
Process
Modeler
724
Context
Modeler
726
Template Generator
731
State Chart Generator
735
733
Pattern Generator
Pattern
Modeler
Action
Modeler
725
727
Action Generator
739
737
Metadata API
Metadata API
Portal
Conn ctor
S rvice
...
KM
Service
Workflow
Servic
Template
Patterns
Actions
790
792
794
796
Metadata
798
Generation
Communication

FIG. 7A

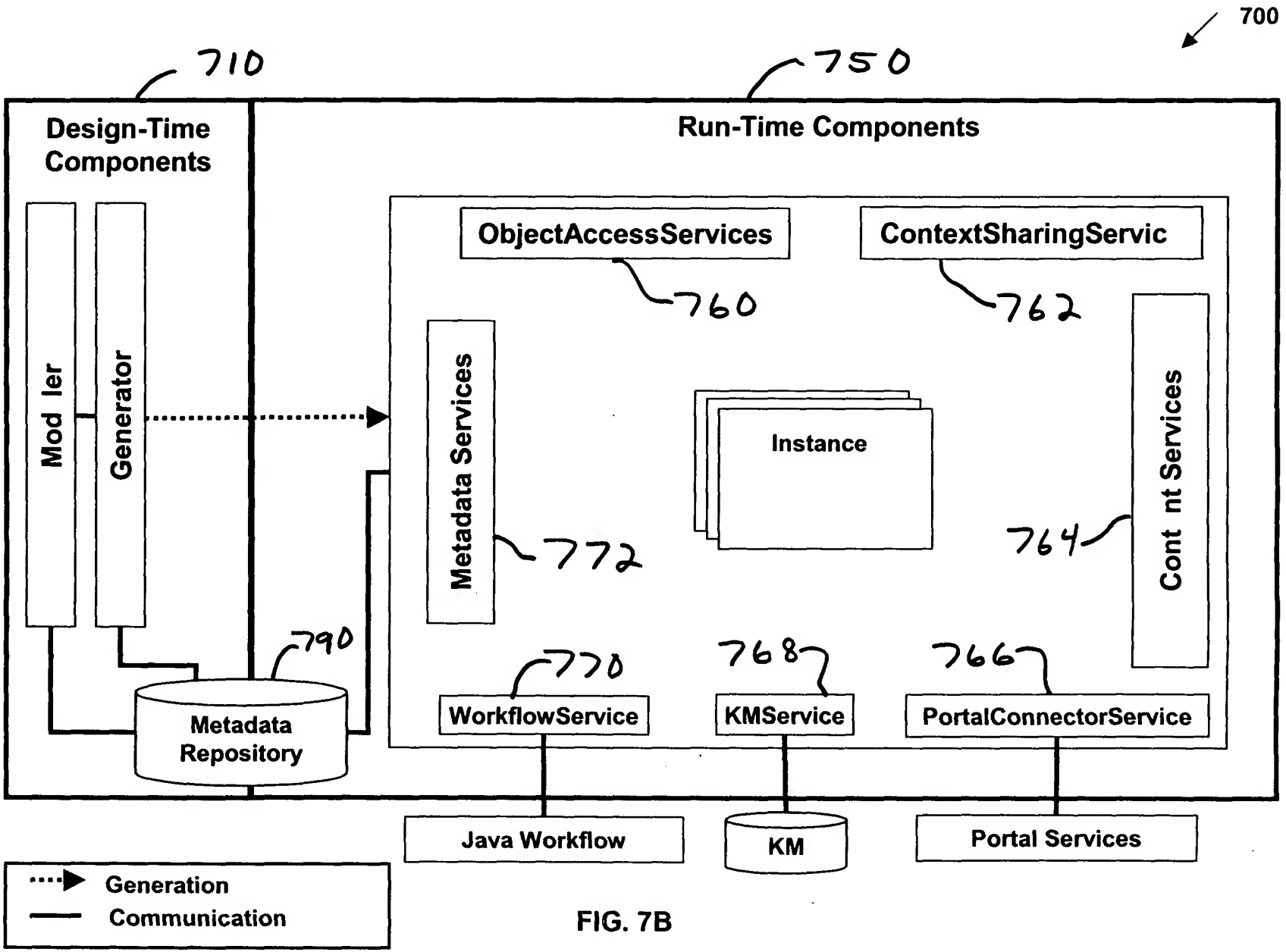
700
710
750
Design-Time Components
Run-Time Components
Mod ler
Generator
ObjectAccessServices
760
ContextSharingServic
762
Metadata Services
772
Instance
Cont nt Services
764
790
770
768
766
Metadata Repository
WorkflowService
KMService
PortalConnectorService
Java Workflow
KM
Portal Services
Generation
Communication

FIG. 7B

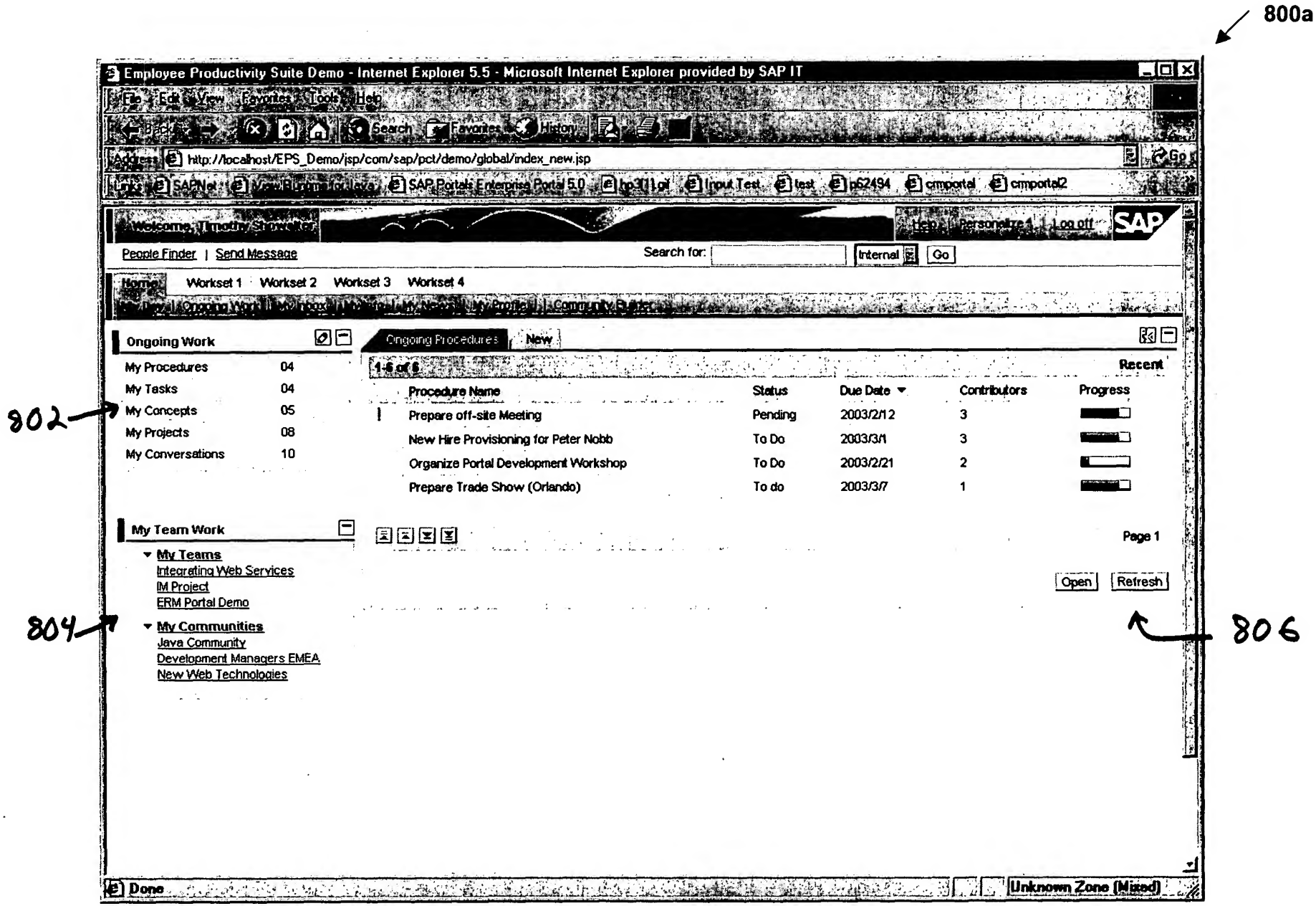
800a
Employee Productivity Suite Demo - Internet Explorer 5.5 - Microsoft Internet Explorer provided by SAP IT
File Edit View Favorites Tools Help
Search Favorites History
Address http://localhost/EPS_Demo/jsp/com/sap/pct/demo/global/index_new.jsp
Links SAPNet SAP Portals Enterprise Portal 5.0 Input Test test p62494 cmportal cmportal2
Welcome, Timothy Stowell
Help | Personalize | Log off
SAP
People Finder | Send Message
Search for:
Internal
Go
Home
Workset 1
Workset 2
Workset 3
Workset 4
Ongoing Work
My Procedures 04
My Tasks 04
My Concepts 05
My Projects 08
My Conversations 10
802
Ongoing Procedures
New
1-6 of 6
Recent
Procedure Name
Status
Due Date
Contributors
Progress
Prepare off-site Meeting
Pending
2003/2/12
3
New Hire Provisioning for Peter Nobb
To Do
2003/3/1
3
Organize Portal Development Workshop
To Do
2003/2/21
2
Prepare Trade Show (Orlando)
To do
2003/3/7
1
Page 1
My Team Work
My Teams
Integrating Web Services
IM Project
ERM Portal Demo
My Communities
Java Community
Development Managers EMEA
New Web Technologies
804
Open
Refresh
806
Done
Unknown Zone (Mixed)

FIG. 8A

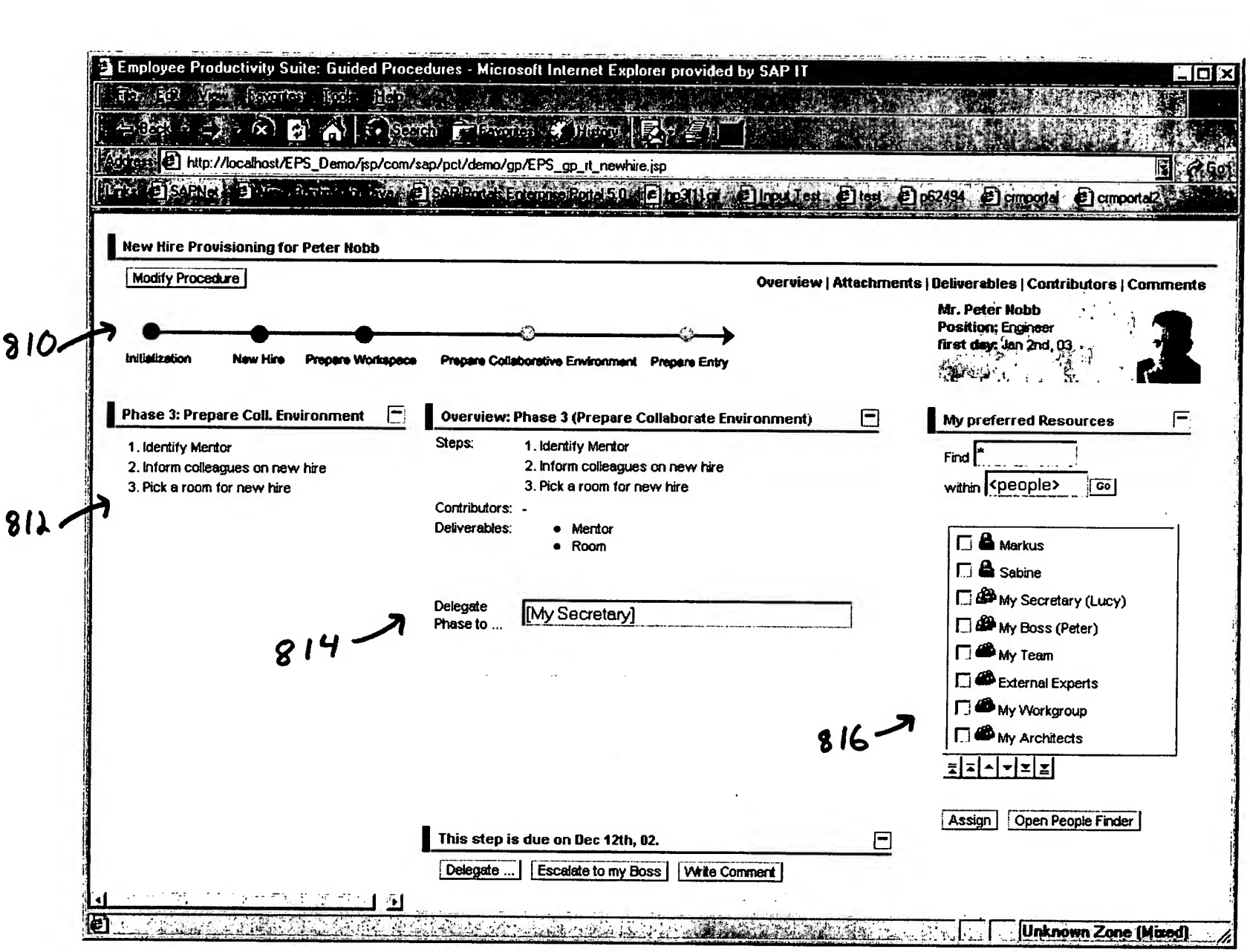
800b
Employee Productivity Suite: Guided Procedures - Microsoft Internet Explorer provided by SAP IT
http://localhost/EPS_Demo/jsp/com/sap/pct/demo/gp/EPS_gp_it_newhire.jsp
New Hire Provisioning for Peter Nobb
Modify Procedure
Overview | Attachments | Deliverables | Contributors | Comments
810
Initialization
New Hire
Prepare Workspace
Prepare Collaborative Environment
Prepare Entry
Mr. Peter Nobb
Position: Engineer
first day: Jan 2nd, 03
Phase 3: Prepare Coll. Environment
1. Identify Mentor
2. Inform colleagues on new hire
3. Pick a room for new hire
812
Overview: Phase 3 (Prepare Collaborate Environment)
Steps:
1. Identify Mentor
2. Inform colleagues on new hire
3. Pick a room for new hire
Contributors: -
Deliverables:
Mentor
Room
814
Delegate Phase to ...
[My Secretary]
My preferred Resources
Find *
within <people>
Go
Markus
Sabine
My Secretary (Lucy)
My Boss (Peter)
My Team
External Experts
My Workgroup
My Architects
816
Assign
Open People Finder
This step is due on Dec 12th, 02.
Delegate ...
Escalate to my Boss
Write Comment
Unknown Zone (Mixed)

FIG. 8B

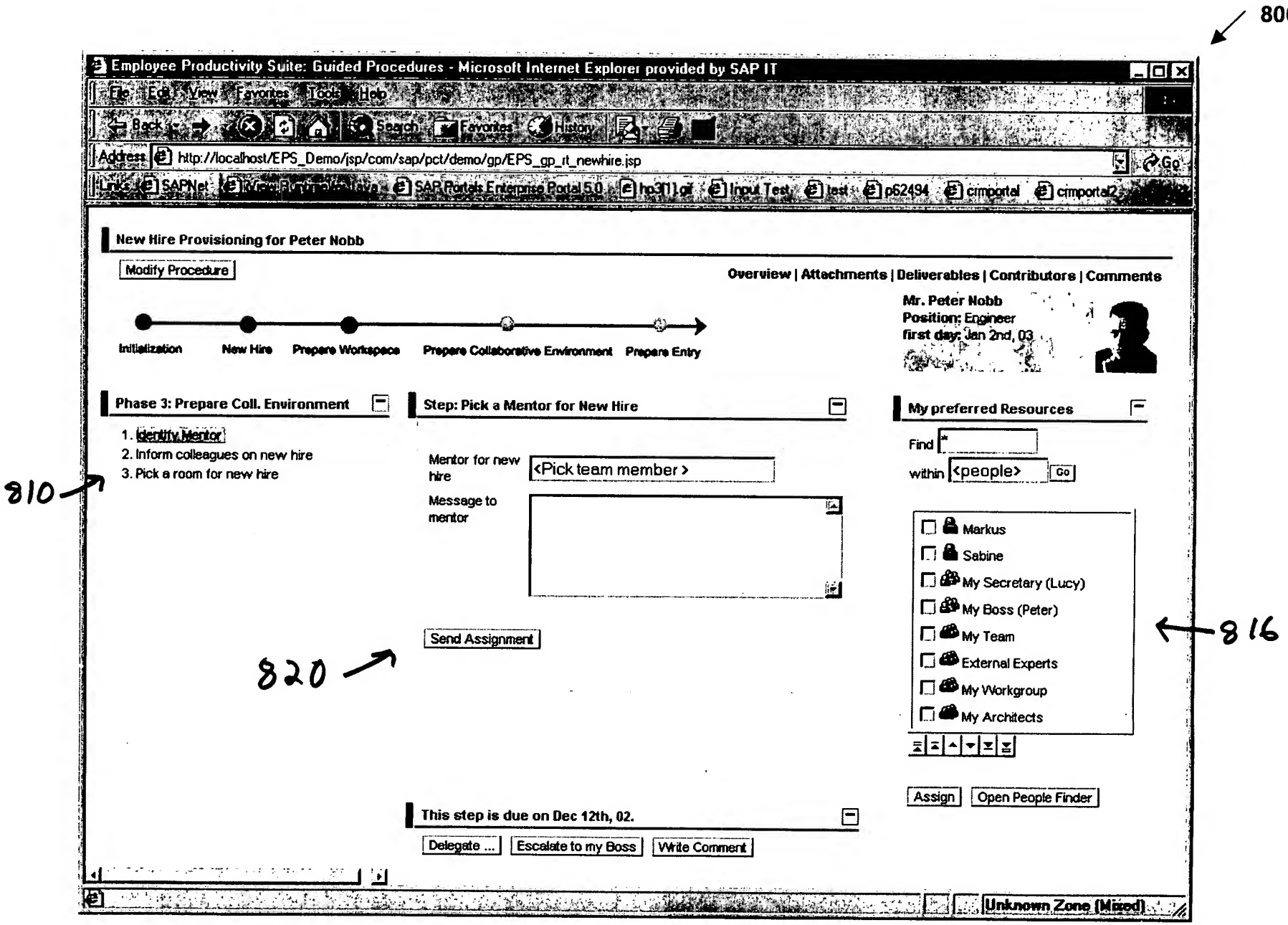
800c
Employee Productivity Suite: Guided Procedures - Microsoft Internet Explorer provided by SAP IT
File Edit View Favorites Tools Help
Back Search Favorites History
Address http://localhost/EPS_Demo/jsp/com/sap/pct/demo/gp/EPS_gp_it_newhire.jsp
Go
Links SAPNet SAP Portals Enterprise Portal 5.0 hp3[1].gif Input Test test p62494 cimportal cimportal2
New Hire Provisioning for Peter Nobb
Modify Procedure
Overview | Attachments | Deliverables | Contributors | Comments
Initialization
New Hire
Prepare Workspace
Prepare Collaborative Environment
Prepare Entry
Mr. Peter Nobb
Position: Engineer
first day: Jan 2nd, 03
Phase 3: Prepare Coll. Environment
1. Identify Mentor
2. Inform colleagues on new hire
3. Pick a room for new hire
810
Step: Pick a Mentor for New Hire
Mentor for new hire
<Pick team member >
Message to mentor
Send Assignment
820
My preferred Resources
Find *
within <people> Go
Markus
Sabine
My Secretary (Lucy)
My Boss (Peter)
My Team
External Experts
My Workgroup
My Architects
816
Assign
Open People Finder
This step is due on Dec 12th, 02.
Delegate ...
Escalate to my Boss
Write Comment
Unknown Zone (Mixed)

FIG. 8C

800c

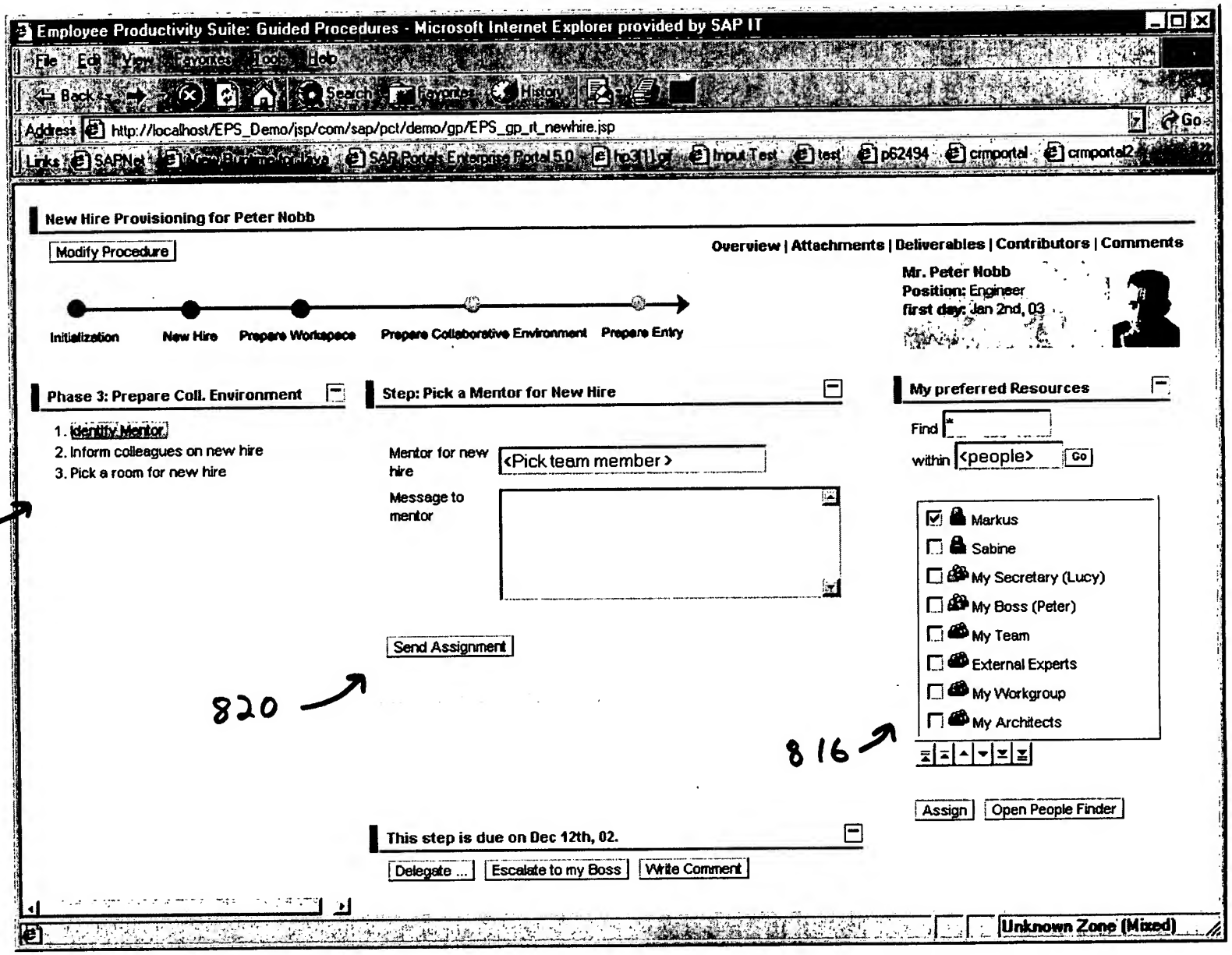
Employee Productivity Suite: Guided Procedures - Microsoft Internet Explorer provided by SAP IT
File Edit View Favorites Tools Help
Back Search Favorites History
Address http://localhost/EPS_Demo/jsp/com/sap/pct/demo/gp/EPS_gp_rt_newhire.jsp
Go
Links SAPNet SAP Portals Enterprise Portal 5.0 Input Test test p62494 crmportal crmportal2
New Hire Provisioning for Peter Nobb
Modify Procedure
Overview | Attachments | Deliverables | Contributors | Comments
Mr. Peter Nobb
Position: Engineer
first day: Jan 2nd, 03
Initialization
New Hire
Prepare Workspace
Prepare Collaborative Environment
Prepare Entry
Phase 3: Prepare Coll. Environment
1. Identify Mentor
2. Inform colleagues on new hire
3. Pick a room for new hire
Step: Pick a Mentor for New Hire
Mentor for new hire
<Pick team member>
Message to mentor
Send Assignment
My preferred Resources
Find
within
<people>
Go
Markus
Sabine
My Secretary (Lucy)
My Boss (Peter)
My Team
External Experts
My Workgroup
My Architects
Assign
Open People Finder
This step is due on Dec 12th, 02.
Delegate ...
Escalate to my Boss
Write Comment
Unknown Zone (Mixed)
810
820
816

FIG. 8D

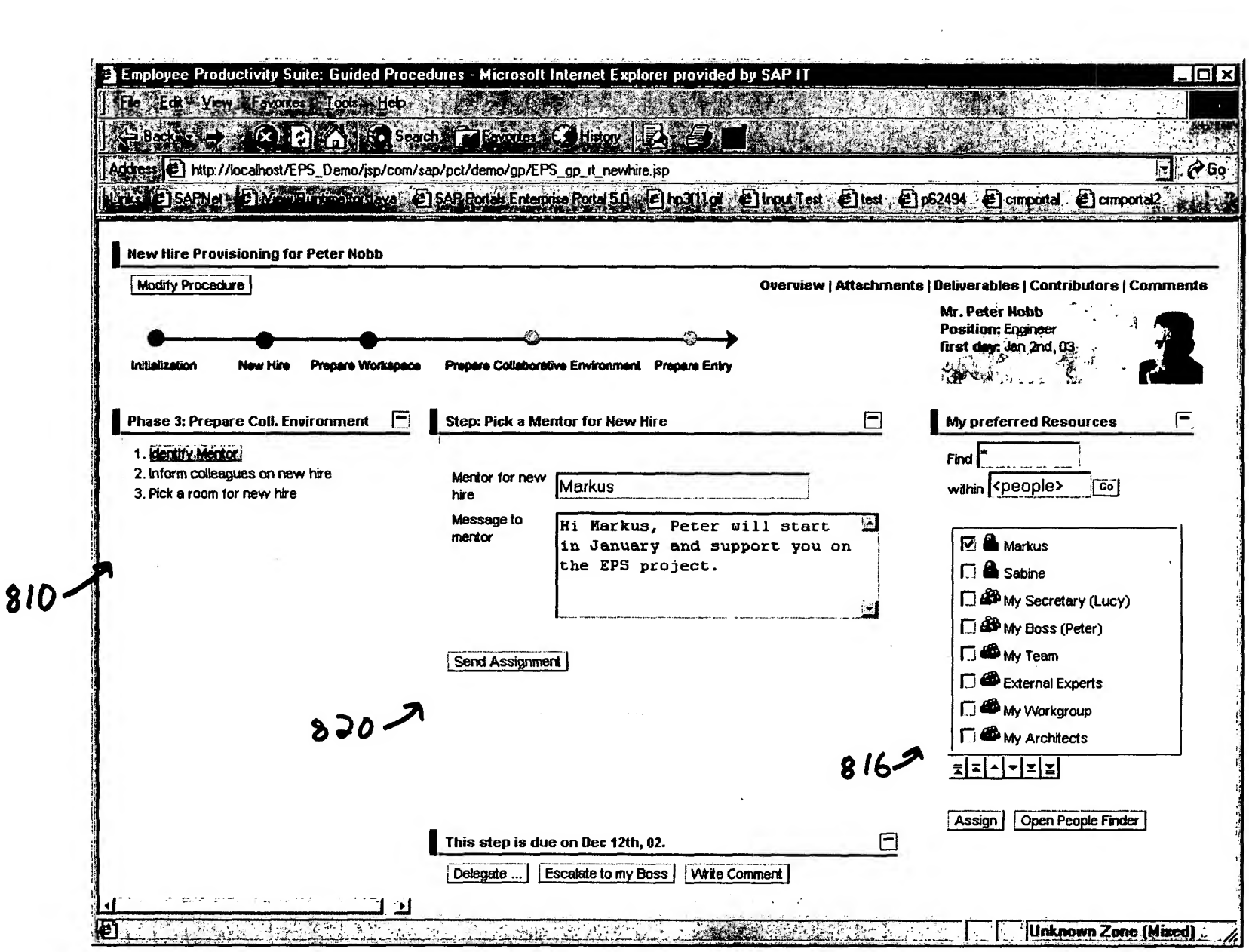
800c
Employee Productivity Suite: Guided Procedures - Microsoft Internet Explorer provided by SAP IT
File Edit View Favorites Tools Help
Back Search Favorites History
Address http://localhost/EPS_Demo/jsp/com/sap/pct/demo/gp/EPS_gp_rt_newhire.jsp
Go
SAPNet SAP Portals Enterprise Portal 5.0 hp311ot Input Test test p62494 crmportal crmportal2
New Hire Provisioning for Peter Nobb
Modify Procedure
Overview | Attachments | Deliverables | Contributors | Comments
Initialization
New Hire
Prepare Workspace
Prepare Collaborative Environment
Prepare Entry
Mr. Peter Nobb
Position: Engineer
first day: Jan 2nd, 03
Phase 3: Prepare Coll. Environment
1. identify Mentor
2. Inform colleagues on new hire
3. Pick a room for new hire
Step: Pick a Mentor for New Hire
Mentor for new hire
Markus
Message to mentor
Hi Markus, Peter will start in January and support you on the EPS project.
Send Assignment
My preferred Resources
Find
within
<people>
Go
Markus
Sabine
My Secretary (Lucy)
My Boss (Peter)
My Team
External Experts
My Workgroup
My Architects
Assign
Open People Finder
This step is due on Dec 12th, 02.
Delegate ...
Escalate to my Boss
Write Comment
Unknown Zone (Mixed)
810
820
816

FIG. 8E

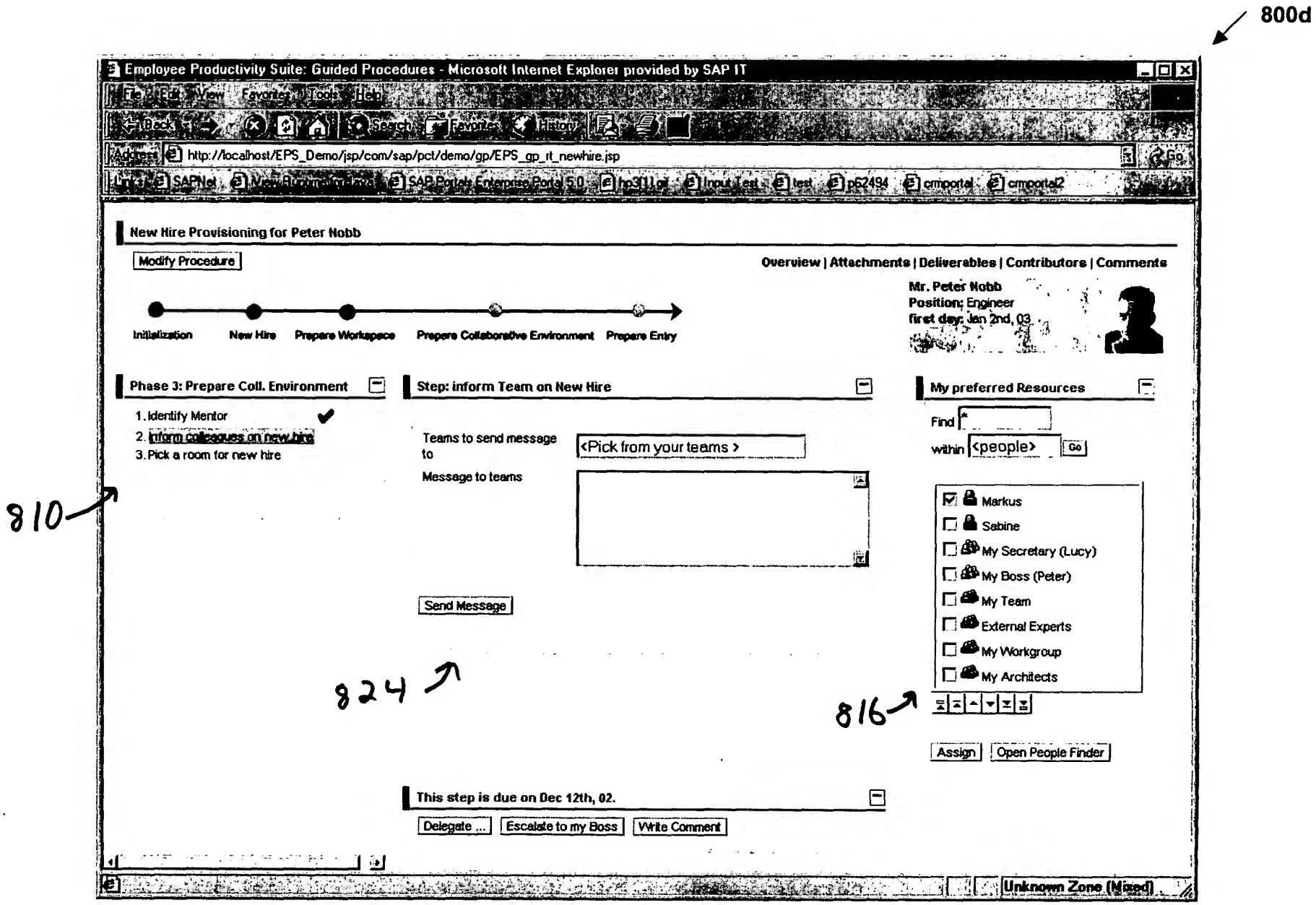
800d
Employee Productivity Suite: Guided Procedures - Microsoft Internet Explorer provided by SAP IT
http://localhost/EPS_Demo/jsp/com/sap/pct/demo/gp/EPS_gp_it_newhire.jsp
New Hire Provisioning for Peter Nobb
Modify Procedure
Overview | Attachments | Deliverables | Contributors | Comments
Mr. Peter Nobb
Position: Engineer
first day: Jan 2nd, 03
Initialization
New Hire
Prepare Workspace
Prepare Collaborative Environment
Prepare Entry
Phase 3: Prepare Coll. Environment
1. Identify Mentor
2. Inform colleagues on new hire
3. Pick a room for new hire
Step: inform Team on New Hire
Teams to send message to
<Pick from your teams >
Message to teams
Send Message
My preferred Resources
Find
within
<people>
Go
Markus
Sabine
My Secretary (Lucy)
My Boss (Peter)
My Team
External Experts
My Workgroup
My Architects
Assign
Open People Finder
This step is due on Dec 12th, 02.
Delegate ...
Escalate to my Boss
Write Comment
Unknown Zone (Mixed)
810
824
816

FIG. 8F

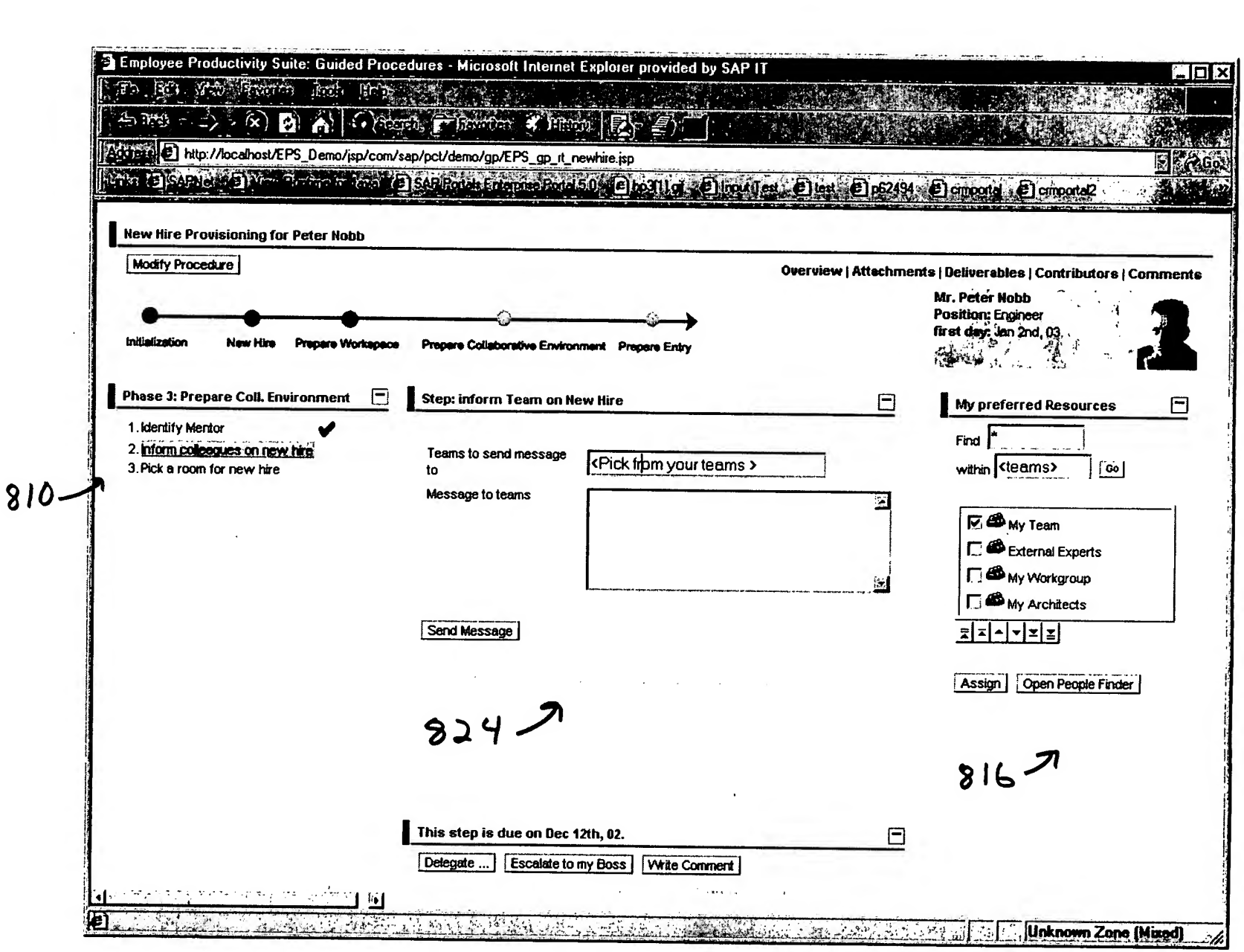
800d
Employee Productivity Suite: Guided Procedures - Microsoft Internet Explorer provided by SAP IT
http://localhost/EPS_Demo/jsp/com/sap/pct/demo/gp/EPS_gp_it_newhire.jsp
New Hire Provisioning for Peter Nobb
Modify Procedure
Overview | Attachments | Deliverables | Contributors | Comments
Initialization
New Hire
Prepare Workspace
Prepare Collaborative Environment
Prepare Entry
Mr. Peter Nobb
Position: Engineer
first day: Jan 2nd, 03
Phase 3: Prepare Coll. Environment
1. Identify Mentor
2. Inform colleagues on new hire
3. Pick a room for new hire
Step: inform Team on New Hire
Teams to send message to
<Pick from your teams >
Message to teams
Send Message
My preferred Resources
Find
within
<teams>
Go
My Team
External Experts
My Workgroup
My Architects
Assign
Open People Finder
This step is due on Dec 12th, 02.
Delegate ...
Escalate to my Boss
Write Comment
Unknown Zone (Mixed)
810
824
816

FIG. 8G

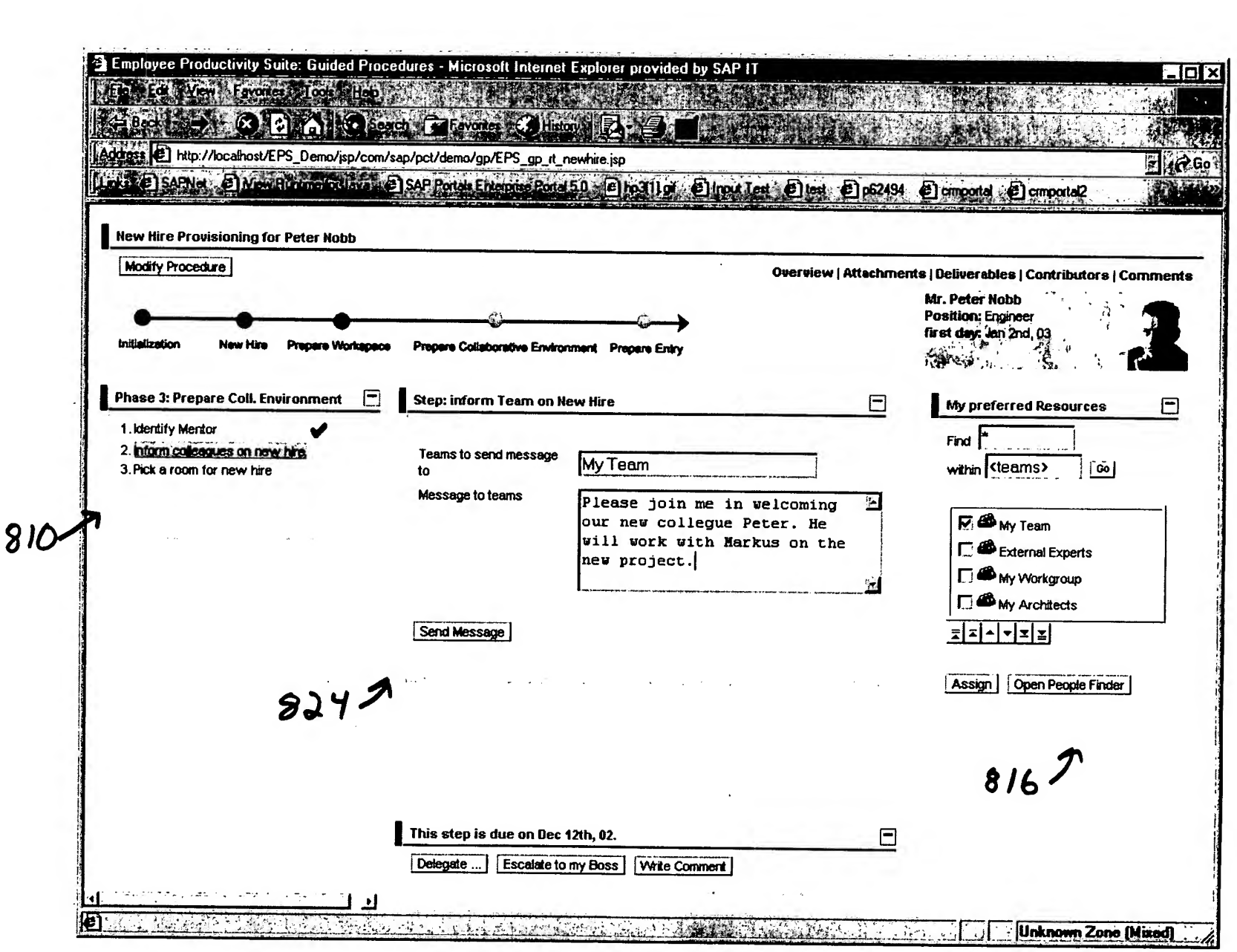
800d
Employee Productivity Suite: Guided Procedures - Microsoft Internet Explorer provided by SAP IT
http://localhost/EPS_Demo/jsp/com/sap/pct/demo/gp/EPS_gp_it_newhire.jsp
New Hire Provisioning for Peter Nobb
Modify Procedure
Overview | Attachments | Deliverables | Contributors | Comments
Initialization
New Hire
Prepare Workspace
Prepare Collaborative Environment
Prepare Entry
Mr. Peter Nobb
Position: Engineer
first day: Jan 2nd, 03
Phase 3: Prepare Coll. Environment
1. Identify Mentor
2. Inform colleagues on new hire
3. Pick a room for new hire
Step: inform Team on New Hire
Teams to send message to
My Team
Message to teams
Please join me in welcoming our new collegue Peter. He will work with Markus on the new project.
Send Message
My preferred Resources
Find
within
<teams>
Go
My Team
External Experts
My Workgroup
My Architects
Assign
Open People Finder
This step is due on Dec 12th, 02.
Delegate ...
Escalate to my Boss
Write Comment
Unknown Zone (Mixed)
810
824
816

FIG. 8H

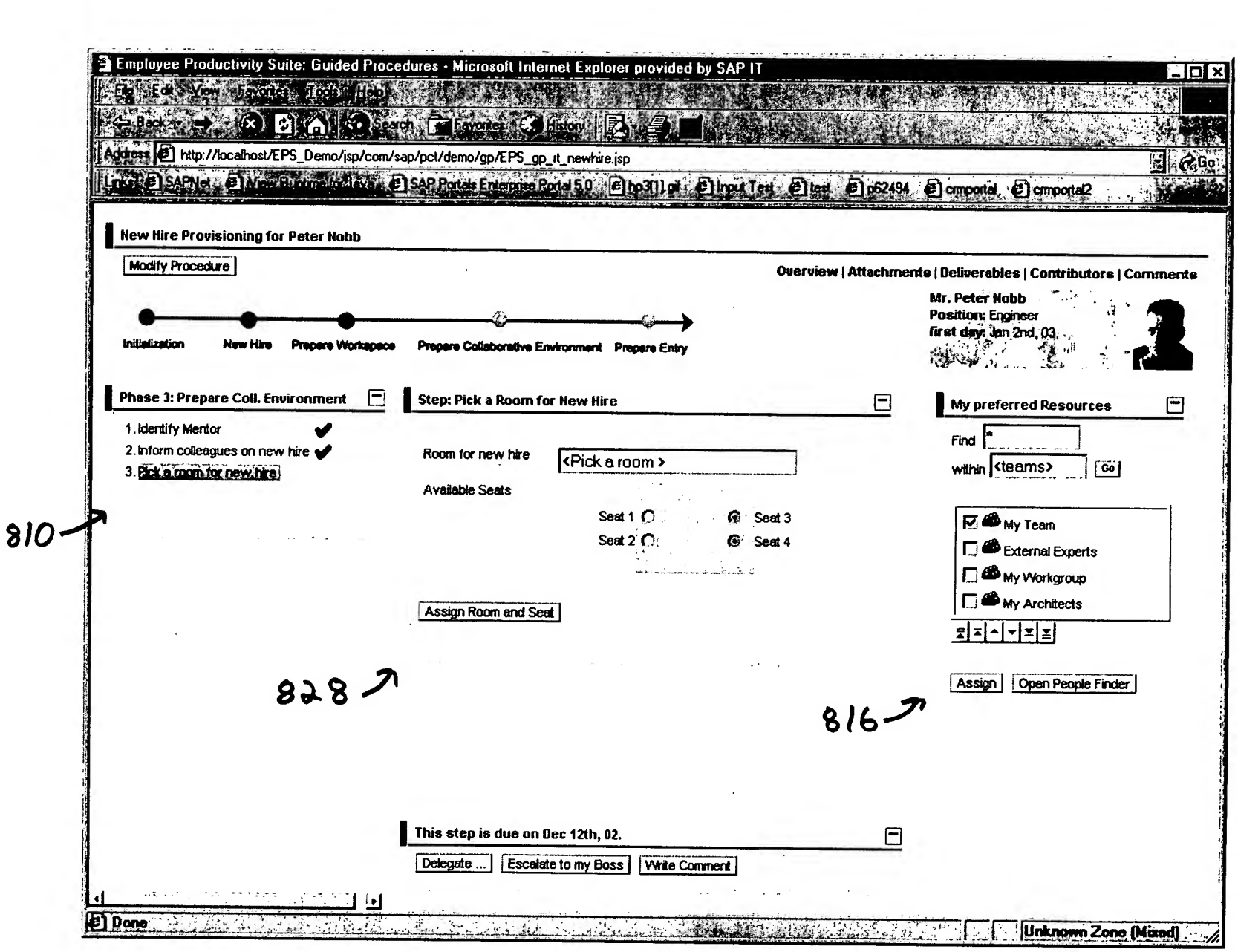
800
Employee Productivity Suite: Guided Procedures - Microsoft Internet Explorer provided by SAP IT
Address http://localhost/EPS_Demo/jsp/com/sap/pct/demo/gp/EPS_gp_it_newhire.jsp
New Hire Provisioning for Peter Nobb
Modify Procedure
Overview | Attachments | Deliverables | Contributors | Comments
Mr. Peter Nobb
Position: Engineer
first day: Jan 2nd, 03
Initialization
New Hire
Prepare Workspace
Prepare Collaborative Environment
Prepare Entry
Phase 3: Prepare Coll. Environment
1. Identify Mentor
2. Inform colleagues on new hire
3. Pick a room for new hire
Step: Pick a Room for New Hire
Room for new hire
<Pick a room >
Available Seats
Seat 1
Seat 2
Seat 3
Seat 4
Assign Room and Seat
My preferred Resources
Find
within
<teams>
Go
My Team
External Experts
My Workgroup
My Architects
Assign
Open People Finder
This step is due on Dec 12th, 02.
Delegate ...
Escalate to my Boss
Write Comment
Done
Unknown Zone (Mixed)
810
828
816

FIG. 8I

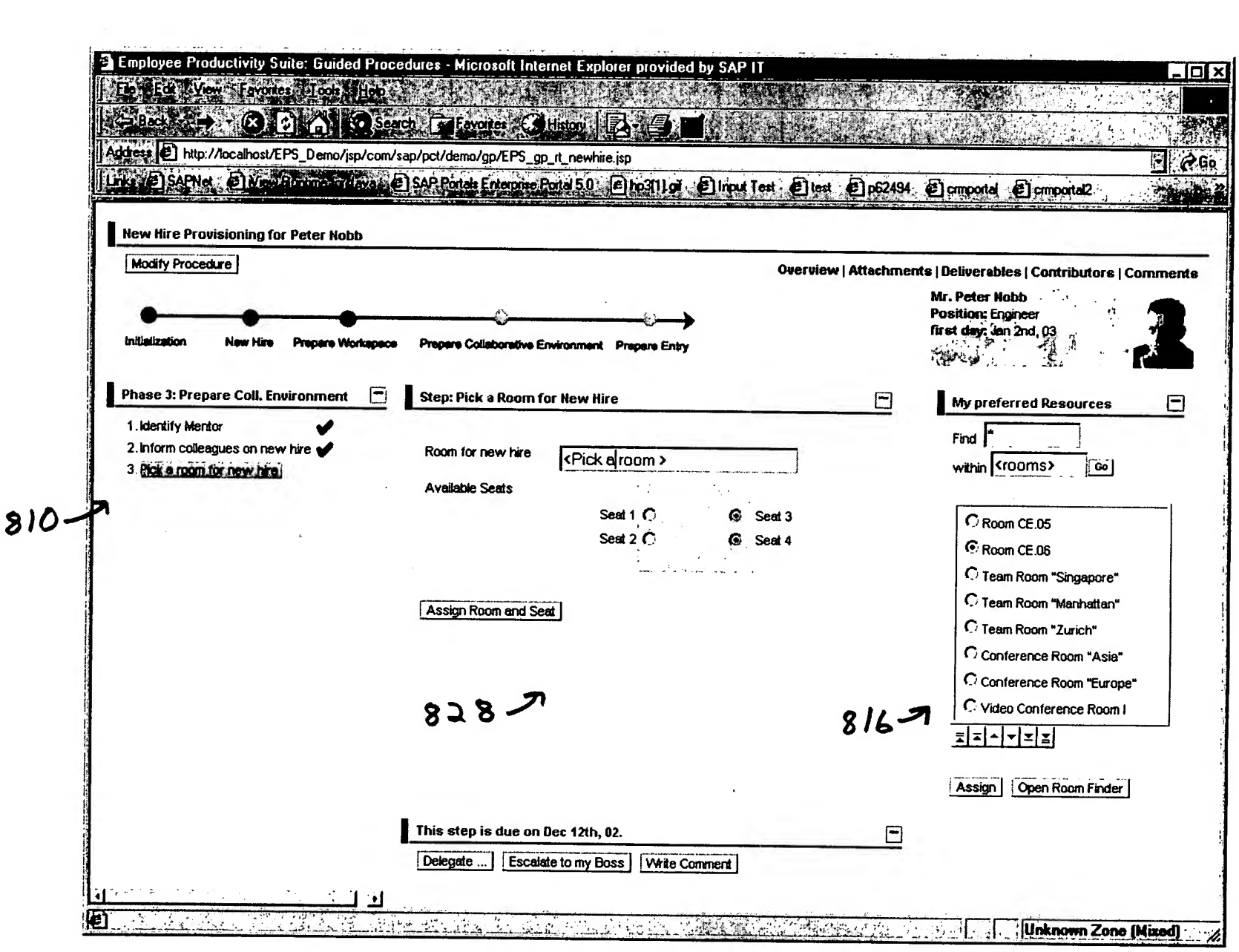
800
Employee Productivity Suite: Guided Procedures - Microsoft Internet Explorer provided by SAP IT
File Edit View Favorites Tools Help
Back Search Favorites History
Address http://localhost/EPS_Demo/jsp/com/sap/pct/demo/gp/EPS_gp_rt_newhire.jsp
Go
Links SAPNet SAP Portals Enterprise Portal 5.0 Input Test test p62494 crmportal crmportal2
New Hire Provisioning for Peter Nobb
Modify Procedure
Overview | Attachments | Deliverables | Contributors | Comments
Mr. Peter Nobb
Position: Engineer
first day: Jan 2nd, 03
Initialization
New Hire
Prepare Workspace
Prepare Collaborative Environment
Prepare Entry
Phase 3: Prepare Coll. Environment
1. Identify Mentor
2. Inform colleagues on new hire
3. Pick a room for new hire
Step: Pick a Room for New Hire
Room for new hire
<Pick a room >
Available Seats
Seat 1
Seat 2
Seat 3
Seat 4
Assign Room and Seat
My preferred Resources
Find
within
<rooms>
Go
Room CE.05
Room CE.06
Team Room "Singapore"
Team Room "Manhattan"
Team Room "Zurich"
Conference Room "Asia"
Conference Room "Europe"
Video Conference Room I
Assign
Open Room Finder
This step is due on Dec 12th, 02.
Delegate ...
Escalate to my Boss
Write Comment
Unknown Zone (Mixed)
810
828
816

FIG. 8J

800

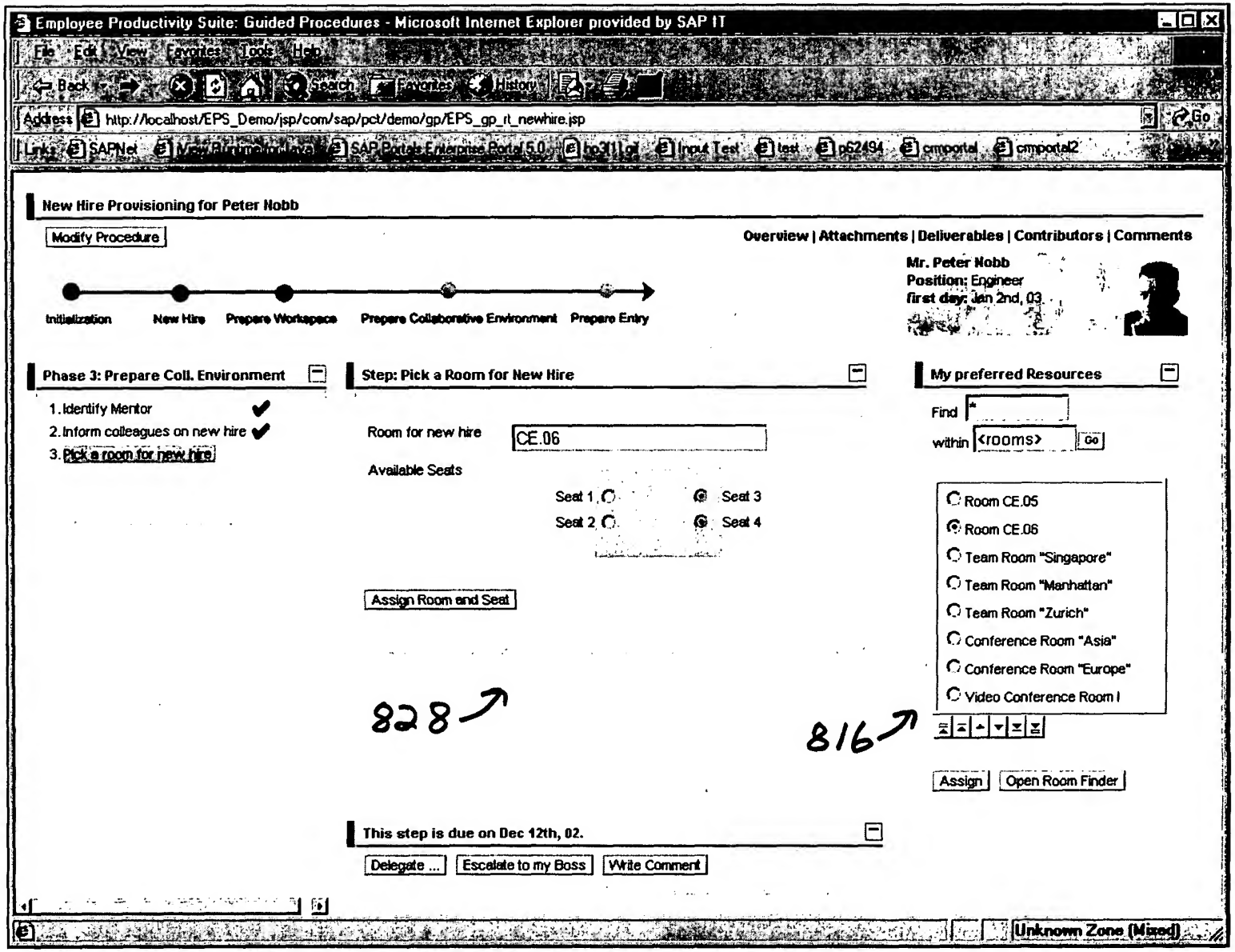
Employee Productivity Suite: Guided Procedures - Microsoft Internet Explorer provided by SAP IT
File Edit View Favorites Tools Help
Back Search Favorites History
Address http://localhost/EPS_Demo/jsp/com/sap/pct/demo/gp/EPS_gp_rt_newhire.jsp
Go
Links SAPNet SAP Portals Enterprise Portal 5.0 Input Test test p62494 cmportal cmportal2
New Hire Provisioning for Peter Nobb
Modify Procedure
Overview | Attachments | Deliverables | Contributors | Comments
Mr. Peter Nobb
Position: Engineer
first day: Jan 2nd, 03
Initialization
New Hire
Prepare Workspace
Prepare Collaborative Environment
Prepare Entry
Phase 3: Prepare Coll. Environment
1. Identify Mentor
2. Inform colleagues on new hire
3. Pick a room for new hire
Step: Pick a Room for New Hire
Room for new hire
CE.06
Available Seats
Seat 1
Seat 2
Seat 3
Seat 4
Assign Room and Seat
828
My preferred Resources
Find
within
<rooms>
Go
Room CE.05
Room CE.06
Team Room "Singapore"
Team Room "Manhattan"
Team Room "Zurich"
Conference Room "Asia"
Conference Room "Europe"
Video Conference Room I
816
Assign
Open Room Finder
This step is due on Dec 12th, 02.
Delegate ...
Escalate to my Boss
Write Comment
Unknown Zone (Mixed)

FIG. 8K

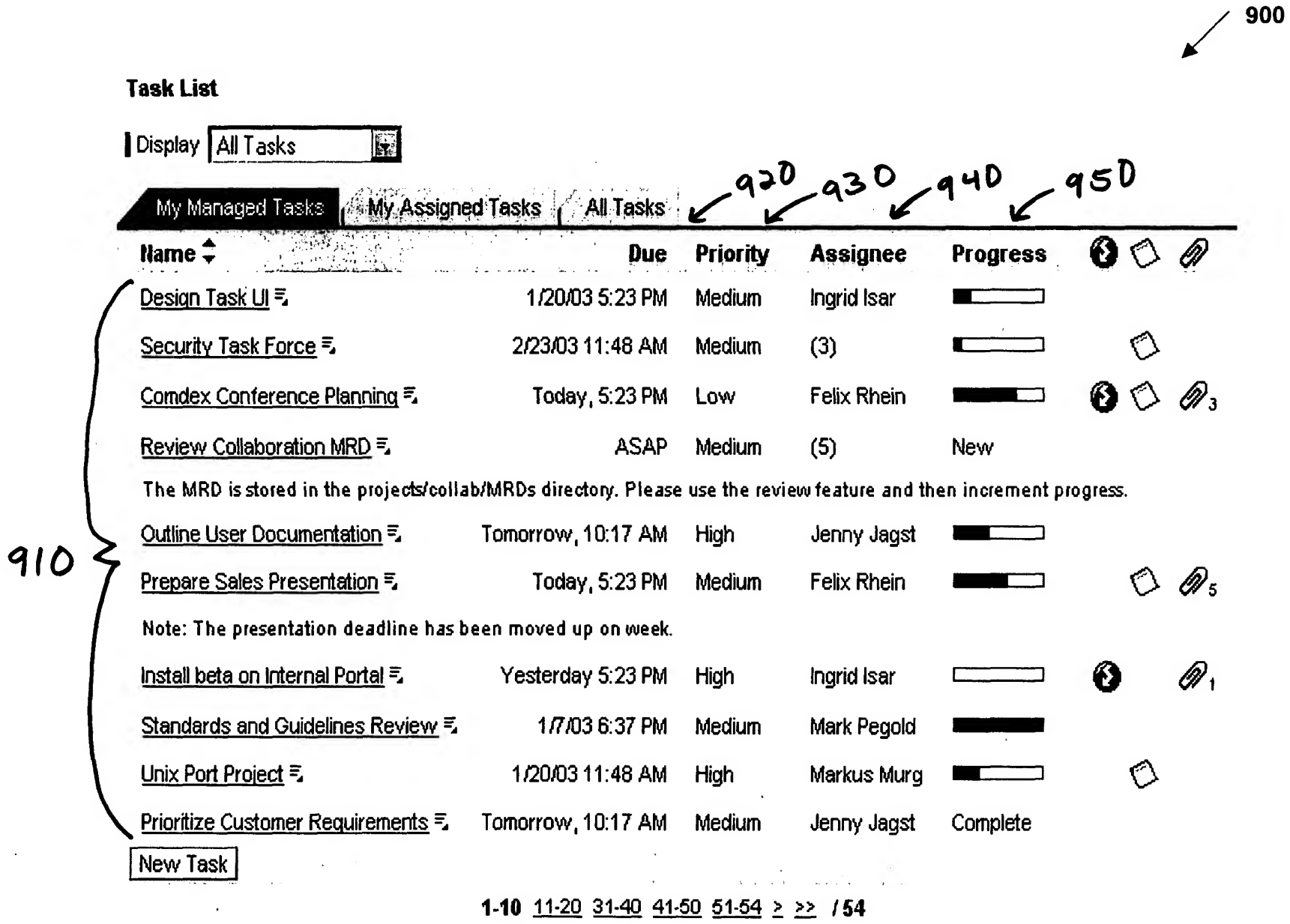
900
Task List
Display All Tasks
My Managed Tasks
My Assigned Tasks
All Tasks
920
930
940
950
Name
Due
Priority
Assignee
Progress
Design Task UI 1/20/03 5:23 PM Medium Ingrid Isar
Security Task Force 2/23/03 11:48 AM Medium (3)
Comdex Conference Planning Today, 5:23 PM Low Felix Rhein 3
Review Collaboration MRD ASAP Medium (5) New
The MRD is stored in the projects/collab/MRDs directory. Please use the review feature and then increment progress.
910
Outline User Documentation Tomorrow, 10:17 AM High Jenny Jagst
Prepare Sales Presentation Today, 5:23 PM Medium Felix Rhein 5
Note: The presentation deadline has been moved up on week.
Install beta on Internal Portal Yesterday 5:23 PM High Ingrid Isar 1
Standards and Guidelines Review 1/7/03 6:37 PM Medium Mark Pegold
Unix Port Project 1/20/03 11:48 AM High Markus Murg
Prioritize Customer Requirements Tomorrow, 10:17 AM Medium Jenny Jagst Complete
New Task
1-10 11-20 31-40 41-50 51-54 > >> /54

FIG. 9

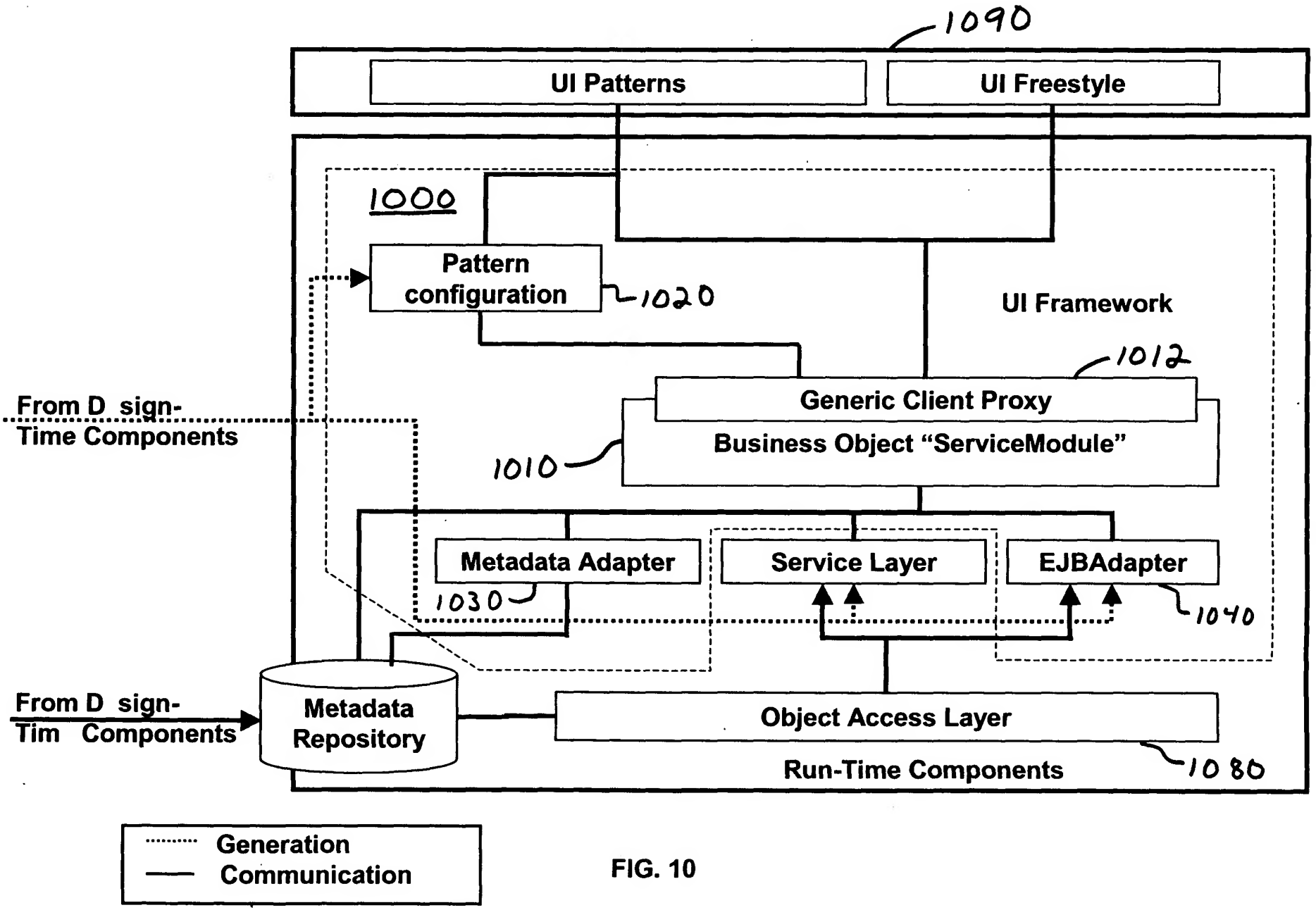
1090
UI Patterns
UI Freestyle
1000
Pattern configuration
1020
UI Framework
1012
Generic Client Proxy
Business Object "ServiceModule"
1010
From D sign-Time Components
Metadata Adapter
Service Layer
EJBAdapter
1030
1040
From D sign-Tim Components
Metadata Repository
Object Access Layer
Run-Time Components
1080
Generation
Communication

FIG. 10